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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 AN)
ORDER AUTHORIZING THE APPROVAL) CASE NO. IPC-E-15-17
OF A LONG TERM PROGRAM CONTRACT)
WITH SIEMENS ENERGY, INC., AND)
DEFERRAL OF ASSOCIATED COSTS.)
_____)

IDAHO POWER COMPANY

REDACTED DIRECT TESTIMONY

OF

TREVOR MAHLUM

1 Q. Please state your name and business address.

2 A. My name is Trevor Mahlum and my business
3 address is 1221 West Idaho Street, Boise, Idaho 83702.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by Idaho Power Company ("Idaho
6 Power" or "Company") as a Power Plant Area Maintenance
7 Leader in the Power Supply Department.

8 Q. Please describe your educational background.

9 A. I graduated from the University of Idaho in
10 2004 with a Bachelor of Science degree in Mechanical
11 Engineering. After receiving my degree, I began my career
12 working as an Experimental Power Reactor Operator at the
13 Idaho National Laboratory ("INL"). I spent approximately
14 two and a half years at the INL working for Battelle Energy
15 before beginning work at Idaho Power.

16 Q. Please describe your work experience with
17 Idaho Power.

18 A. I joined Idaho Power in June of 2007 as an
19 Engineer I in the Power Production Engineering group. As a
20 mechanical engineer, I supported the gas turbine fleet
21 through construction, contracting, project modifications,
22 outages, and environmental reporting. Beginning in 2008, I
23 lead the effort to obtain a Permit to Construct through the
24 Idaho Department of Environmental Quality for the
25 construction of the Langley Gulch power plant ("Langley

1 Gulch"). From 2009 through 2013, I assisted with the
2 Langley Gulch construction through contract support,
3 specifications review, reporting, on-site construction
4 help, and plant commissioning. In 2013, I was promoted to
5 the position of Power Plant Area Maintenance Leader where
6 my current responsibilities include both maintenance and
7 project improvements at the Langley Gulch, Danskin, and
8 Bennett Mountain facilities. In addition, I am the lead
9 technical reviewer for the Long Term Program ("LTP")
10 Contract.

11 Q. What is Idaho Power requesting in this case?

12 A. Idaho Power is requesting (1) approval of the
13 LTP Contract with Siemens Energy, Inc. ("Siemens"), (2)
14 approval of the transfer and sale of certain assets to
15 Siemens pursuant to *Idaho Code* § 61-328, and (3) approval
16 of the Company's proposed accounting treatment of costs
17 associated with the LTP Contract.

18 Q. What is the purpose of your testimony in this
19 case?

20 A. My testimony in this case will describe Idaho
21 Power's current management of its gas plant maintenance
22 program and the benefits that would exist with gas plant
23 maintenance provided for under the LTP Contract with
24 Siemens. Company witness Courtney E. Waites will describe
25 Idaho Power's request for approval of the transfer and sale

1 of certain assets to Siemens pursuant to *Idaho Code*
2 § 61-328 and its request for approval of the Company's
3 proposed accounting treatment.

4 Q. Please describe the Company's gas fleet.

5 A. Idaho Power owns and operates three natural
6 gas-fired facilities: the Langley Gulch combined cycle
7 combustion turbine ("CCCT"), the Danskin simple cycle
8 combustion turbine ("SCCT"), and the Bennett Mountain SCCT.
9 The Langley Gulch plant consists of one 180 megawatt ("MW")
10 Siemens STG-5000F4 combustion turbine and one 96 MW Siemens
11 SST-700/SST-900 reheat steam turbine and is located south
12 of New Plymouth in Payette County, Idaho. Located northwest
13 of Mountain Home, Idaho, the Danskin facility consists of
14 one 169 MW Siemens 501F and two 44 MW Siemens-Westinghouse
15 W251B12A combustion turbines. The Bennett Mountain plant
16 is located east of the Danskin plant in Mountain Home,
17 Idaho, and consists of one 162 MW Siemens-Westinghouse 501F
18 SCCT.

19 Q. How does Idaho Power currently maintain its
20 gas fleet?

21 A. At this time, Idaho Power self-manages its
22 natural gas fleet through a collaborative effort between
23 the Company and the original equipment manufacturer
24 ("OEM"). The Company's OEM for all its combustion turbines
25 is Siemens. Idaho Power's combustion turbines are subject

1 to required maintenance outages at OEM-recommended
2 intervals based upon each plant's primary mode of
3 operation. Based on Idaho Power's historical operating
4 profile, the Danskin and Bennett Mountain SCCTs have
5 maintenance intervals based on the number of plant start-
6 ups and Langley Gulch has a maintenance schedule based on
7 hours of operation.

8 Currently, each outage has been contracted to
9 Siemens for service on a case-by-case basis. The service
10 includes an outage field engineer that oversees the outage,
11 a service crew that performs the work, and the rental of
12 specialized tooling required for the removal and subsequent
13 installation of the turbine components. Under the self-
14 manage approach, Idaho Power's only option is to buy parts
15 at the manufacturer's full list prices. In addition to the
16 contract for OEM service, Idaho Power may be required to
17 contract for ancillary services or equipment for each
18 outage, such as mobile cranes, insulation crews,
19 scaffolding crews, and sanitary facilities, depending on
20 the scope of each outage.

21 Q. Does the Company's self-management of its gas
22 plants include any other maintenance requirements?

23 A. Yes. In addition to the OEM service, turbine
24 components(i.e., turbine blades, combustor baskets, and
25 fuel nozzles) need to be replaced at their respective

1 individual service intervals. These turbine components are
2 costly, proprietary, and have lead times up to 48 weeks.
3 Idaho Power's current practice is to purchase the parts
4 from Siemens in advance of the outage, allowing adequate
5 time for delivery and possession of the parts prior to
6 commencement of the outage, and, upon receipt, are
7 capitalized. During the outage, the existing parts are
8 removed and the replacement parts are installed, resulting
9 in short outage windows and earlier plant availability.

10 Q. What does Idaho Power do with the parts that
11 have been removed from the combustion turbines?

12 A. The removed parts are retired from Idaho
13 Power's books and sent to Siemens' service shop where they
14 are inspected and repaired. Once refurbished, the parts
15 are returned to the Company, capitalized, and ready for use
16 again.

17 Q. Are there any other maintenance tasks required
18 for Idaho Power's gas fleet?

19 A. Yes. The maintenance of the Company's gas
20 fleet also requires various additional tasks to be
21 performed by both Idaho Power and contractor personnel.
22 Idaho Power completes pre- and post-inspection work while
23 also performing other facility maintenance and repairs
24 (i.e., exhaust repairs, fuel filter replacements, valve
25 repairs) during turbine outages to maximize the

1 availability of the plant. Work on the turbine allows for
2 a complete combustion inspection, including, but not
3 limited to, the removal and reinstallation of new or
4 refurbished pilot nozzles, support housings, combustor
5 baskets, transition seals, as well as some consumable parts
6 like bolts, washers, and gaskets. Because these additional
7 tasks require scheduled outages, Siemens often performs
8 supplementary work as an adder to the base cost of an
9 inspection, typically at a discounted price.

10 Q. What prompted Idaho Power to look at other gas
11 plant maintenance options?

12 A. Idaho Power began looking at other maintenance
13 options for its gas fleet during construction of the
14 Langley Gulch plant. Langley Gulch is the Company's only
15 CCCT and uses some of the newest, most technologically
16 advanced parts on the market. Idaho Power recognized that
17 its employees do not have all of the necessary technical
18 skills to maintain the plants to the level offered by
19 Siemens.

20 Q. Did the Company issue a request for proposal
21 for the services provided for under the LTP Contract?

22 A. No. However, Idaho Power did contract with a
23 professional knowledgeable in long-term program contracts
24 who contacted multiple third-party providers of gas plant
25 maintenance as part of a formal request for information

1 process. Those third-party proposals were analyzed by both
2 the Company and the contracted professional and it was
3 determined that there are currently no other third-party
4 maintenance providers that could provide services
5 equivalent to those provided under the LTP Contract with
6 Siemens. Because Siemens is the OEM for all of the
7 Company's gas plants and is the industry leader in gas
8 plant maintenance, the only available alternative to the
9 LTP Contract with Siemens would be the continuation of a
10 Company-managed maintenance program with technical support
11 and parts purchased from Siemens.

12 Q. Prior to the execution of this agreement, was
13 a LTP Contract with Siemens an option?

14 A. Yes. However, when Idaho Power operated only
15 the Danskin and Bennett Mountain plant SCCTs, an LTP
16 Contract was not an economical alternative because of the
17 limited frequency of maintenance outages for those plants.
18 SCCT outages are based on the number of start-ups so
19 multiple years exist between scheduled outages at the
20 Danskin and Bennett Mountain plants. Until the addition of
21 the Langley Gulch CCCT, contracting for gas plant
22 maintenance services with Siemens at each outage interval
23 has been the most cost-effective approach. With the
24 construction of Langley Gulch, a baseload CCCT whose
25 maintenance is based upon run-time hours, the Company

1 anticipates more frequent gas plant maintenance activities
2 to exist going forward. With this in mind, Idaho Power
3 began evaluating and negotiating an agreement with Siemens
4 for a LTP.

5 Q. Is there a difference in cost to Idaho Power
6 between the self-management option and a LTP Contract?

7 A. Yes. The LTP Contract will provide a lower
8 priced alternative to the maintenance of the Company's gas
9 plants; Idaho Power estimates the cost to continue with
10 self-management would be approximately \$ [REDACTED] over
11 the life of the contract while the LTP Contract would cost
12 approximately \$ [REDACTED] over the comparable time
13 period, a savings of \$ [REDACTED] over the life of the
14 agreement.

15 Q. Please describe the LTP Contract the Company
16 is requesting approval of in this proceeding.

17 A. Under the LTP Contract, Siemens will provide
18 scheduled maintenance on all three combustion turbines,
19 including program parts or repairs, shipping, services,
20 labor, engineering services, and program management
21 services. Program parts consist of the major combustion
22 turbine parts provided by Siemens, including the locking
23 hardware used to affix the parts, the parts installed in
24 the combustion turbine upon the effective date, all initial
25 spare parts, and all parts changed during the length of the

1 contract ("Program Parts"). Some of these Program Parts
2 are the latest technology Idaho Power would not otherwise
3 have access to and their superiority eliminates the need
4 for two combustor inspection outages at Langley Gulch.
5 Moreover, they are available under the LTP Contract at a [REDACTED]
6 [REDACTED] discount from the list price.

7 Siemens will also perform unscheduled maintenance on
8 all three combustion turbines to the extent such work is
9 not covered by Siemens' other warranties under the
10 contract. Leveraging Siemens' pool of regional inventory,
11 outage resources, and technical expertise will result in
12 lower overall costs to Idaho Power and its customers.

13 Q. Aside from lower costs over the life of the
14 contract, how does the LTP Contract differ from the
15 Company's current self-managed maintenance practice?

16 A. The following chart provides a high level
17 comparison of Idaho Power's current maintenance practices
18 compared to offerings under the LTP Contract:

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	<u>Current Maintenance Practice</u>	<u>Proposed LTP Contract</u>
Scope of Work	As established in each individual purchase order.	Scheduled and unscheduled maintenance at all three gas facilities.
Term	As established in each individual purchase order; on a case-by-case basis.	Up to 25 years.
Warranties	Equipment: the lesser of 18 months from delivery or 12 months from installation. Software: 12 months from date of shipment. Shop Repair/Modernization: 12 months from shipment. Technical services: 12 months from completion.	Program Parts: during the term of the LTP Contract. Open/Close Hardware and non-Program Parts: up to [REDACTED] for Langley Gulch and up to [REDACTED] for Danskin and Bennett Mountain. Includes a post-term parts warranty after end of LTP Contract. Scheduled outage duration guaranty. Warranty response guaranty. Reliability guaranty.
Limitation on Liability	In all circumstances, Siemens' liability is limited to the total price paid to Siemens under the applicable purchase order giving rise to the claim.	Total aggregate liability during any calendar year is limited to the greater of [REDACTED]. Further there is a lifetime cap equal to 100 percent of all amounts paid to Siemens under the LTP Contract.
Price	As established in each individual purchase order.	Per unit initiation fees combined with large milestone amounts due at or near actual outage events.

1 As shown above, the LTP Contract will provide Idaho
2 Power with both scheduled and unscheduled maintenance
3 activities for an extended period of time while offering
4 enhanced price predictability. In addition, provisions
5 with respect to performance obligations, guaranties,
6 warranties, liquidated damages, and limitation on liability
7 will mitigate risk.

8 Q. What is the length of the contract with
9 Siemens under the LTP Contract?

10 A. The contract term of the LTP Contract is the
11 time between the execution date and the earlier of the
12 performance end date for each combustion turbine or 25
13 years. Because the performance end date is based on a
14 combination of the number of scheduled outages, equivalent
15 baseload hours or equivalent starts, the expiration of the
16 contract will vary for each combustion turbine; the
17 estimated expiration date of the LTP Contract for each
18 combustion turbine ranges 18-22 years. When analyzing the
19 LTP Contract, the Company has assumed a contract term of 20
20 years.

21 Q. What warranties are provided by Siemens under
22 the LTP Contract?

23 A. Under the LTP Contract, Siemens will warranty
24 all Program Parts during the term of the contract. In
25 addition, if the LTP Contract is executed, Siemens will

1 warranty open and close hardware and non-Program Parts for
2 the Danskin and Bennett Mountain plants for up to [REDACTED]
3 and up to [REDACTED] for the Langley Gulch plant. After the
4 end of the contract term, generally [REDACTED] from the date
5 of the last major outage, Siemens will provide limited
6 warranty coverage for all new, repaired, or refurbished
7 Program Parts, non-Program Parts, and open and close
8 hardware.

9 Q. What is Siemens' commitment in handling
10 warranty claims?

11 A. [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED].

18 Q. What are the limitations of liability under
19 the LTP Contract with Siemens?

20 A. The contract contains market limitations on
21 certain consequential damages for long-term program
22 contracts for the benefit of both parties. [REDACTED]

23 [REDACTED]
24 [REDACTED]
25 [REDACTED]

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

5 Q. How is the pricing structured under the LTP
6 Contract?

7 A. The pricing structure under the LTP Contract
8 involves per-unit initiation fees, combined with periodic
9 milestone amounts due at or near the actual outage events.

10 Q. What are the per-unit initiation fees?

11 A. In an attempt to more appropriately match
12 payments made to Siemens with the work Siemens will
13 perform, the parties negotiated a milestone-based fee
14 structure as explained above, including the per-unit
15 initiation fees. Because milestone work is expected to
16 occur every few years, resulting in periodic milestone-
17 based payments, Siemens requires an initiation fee higher
18 than under a fixed annual, outage, and variable fee-based
19 pricing structure as a prepayment toward services that will
20 be performed over the life of the agreement. The total
21 initiation fee is \$ [REDACTED] and is due upon execution of
22 the LTP Contract.

23 Q. Please describe the milestone payments.

24 A. The milestone payments are payments due at or
25 near actual outage events. The payments include a

1 Combustor Inspection Milestone payment, a First Hot Gas
2 Path Milestone payment, and Major Inspection Milestone
3 payments, which is an inspection that encompasses the full
4 scope of both the combustor inspection and the hot gas path
5 inspection as well as a full compressor inspection.
6 Similar to the accounting for work performed by Siemens
7 under the current self-management of maintenance, a portion
8 of the milestone payments will be capitalized and a portion
9 will be operation and maintenance ("O&M") expense, which
10 has historically been a capital and O&M split of 89 percent
11 and 11 percent, respectively.

12 Q. Please summarize your testimony.

13 A. Idaho Power currently self-manages its gas
14 plant maintenance through a collaborative effort between
15 the Company and Siemens, contracting for outage and
16 maintenance services on a case-by-case basis. The
17 construction of the Langley Gulch plant employs some of the
18 most technologically advanced parts available, resulting in
19 third-party maintenance provisions offered only by Siemens.
20 Until now, individually contracting for maintenance
21 services for gas plant maintenance with Siemens has been
22 the most cost-effective approach. Execution of a LTP
23 Contract with Siemens will provide a lower-priced
24 alternative to self-managed maintenance of Idaho Power's
25 gas plants.

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Q. Does this conclude your testimony?

A. Yes, it does.

