

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter of the application of)
UPPER PENINSULA POWER COMPANY)
for authority to increase retail electric rates.)
_____)

Case No. U-16166

DIRECT TESTIMONY AND EXHIBITS OF

GARY A. CHRISTENS

FOR

UPPER PENINSULA POWER COMPANY

June 30, 2010

STATE OF MICHIGAN

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**QUALIFICATIONS
OF
GARY A. CHRISTENS
PART I**

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

2 A. My name is Gary A. Christens. My business address is Integrys Business Support
3 LLC ("IBS"), 700 North Adams Street, P.O. Box 19001, Green Bay, WI 54307-9001.
4 My position with Integrys is Director – Investments. Both IBS and Upper Peninsula
5 Power Company ("UPPCO") are wholly-owned subsidiaries of Integrys Energy
6 Group, Inc ("Integrys").

7

8 **Q. For whom are you providing testimony?**

9 A. I am providing testimony on behalf of UPPCO.

10

11 **Q. Please describe briefly your educational, professional, and utility background.**

12 A. I graduated from the University of Wisconsin - Green Bay with a Bachelor of Science
13 degree in Accounting. I began my career with Wisconsin Public Service Corporation
14 ("WPS Corp") in 1976 in the corporate accounting department. WPS Corp is also a
15 wholly-owned subsidiary of Integrys. I am a certified public accountant in the State
16 of Wisconsin and a member of the Wisconsin Institute of CPAs. I have held
17 positions in the accounting department, human resources department, tax

- 1 department, corporate offices, and treasury departments within subsidiaries of
- 2 Integrys.

**GARY A. CHRISTENS
DIRECT TESTIMONY
PART II**

1 **Q. What is the purpose of your pre-filed direct testimony?**

2 A. The purpose of my pre-filed direct testimony is to present the results of the economic
3 analysis used to evaluate the "alternative management options" that UPPCO
4 considered for the Au Train hydro-electric generation facility. The viable alternative
5 management options, as discussed in Mr. Charles W. Severance's direct testimony,
6 included:

- 7 1. Surrendering the FERC license and abandoning the facility (Option 1),
8
- 9 2. Selling the facility to a party that would accept a transfer of the FERC license
10 and continue operate the facility (Option 3), and
11
- 12 3. Upgrading the facility to meet FERC standards, and continuing to own and
13 operate the facility (Option 4).
14

15

16 **Q. Are you sponsoring any exhibits in this proceeding?**

17 A. Yes, I am. I am sponsoring Exhibit A-9 (GAC-1), consisting of four pages.
18

19 **Q. Was this exhibit prepared by you or under your direction and supervision?**

20 A. Yes, it was.
21

22 **Q. Please describe Exhibit A-9 (GAC-1).**

23 A. Exhibit A-9 (GAC-1) is a summary of the financial assumptions, inputs and results of
24 the alternative management options modeled for the Au Train facility.
25

26 **Q. What economic analysis method was used?**

27 A. A net present value of revenue requirements ("PVRR") analysis for UPPCO
28 customers, discounted to 2010, was developed for each alternative management

1 option, taking into account the applicable costs, accounting treatment, and recovery
2 period. The impacts of each alternative management option were considered
3 through the year 2037, which corresponds to the expiration of the current Au Train
4 facility Federal Energy Regulatory Commission (“FERC”) license.

5
6 In addition, for Option 1 (Surrendering the FERC license and abandoning the facility),
7 and Option 4 (Upgrading the facility to meet FERC standards, and continuing to own
8 and operate the facility), a high cost case (worst case), and a low cost case (best
9 case), was completed.

10

11 **Q. Why was a PVRR analysis selected?**

12 A. A PVRR analysis was selected because a PVRR analysis best models the cost
13 impacts to UPPCO’s customers over the life of the facility.

14

15 **Q. What was the basis for the cost estimates used in the economic analysis for
16 each option?**

17 A. The cost estimates for Options 1 and 4 were provided to me by Integrys
18 environmental and engineering personnel based on their knowledge and past
19 experience with previous hydroelectric projects.

20

21 The costs for Option 3 are known with surety, as they are the costs associated with
22 the purchase agreement between UPPCO and UP Hydro, as explained in the direct
23 testimony of Mr. Charles W. Severance.

24

25

26

27

1 **Q. What were the results of your economic analysis?**

2 A. The results are shown on Exhibit A-9 (GAC-1). In short, Option 3 (Selling the facility
3 to a party that would accept a transfer of the FERC license and continue to operate
4 the facility) resulted in the lowest PVRR at \$8.5 million.

5

6 **Q. Did the results of the economic analysis change when a best case estimate
7 was compared to Option 3?**

8 A. No, it did not. Option 3 (Selling the facility to a party that would accept a transfer of
9 the FERC license and continue to operate the facility) resulted in the lowest PVRR
10 under any set of “best case” or “worst case” assumptions.

11

12 **Q. What costs were included in Option 3?**

13 A. In accordance with the signed Asset Sale Agreement with UP Hydro, the costs
14 included in the analysis of Option 3 included:

- 15 1. \$2.5 million that UPPCO would be required to pay the buyer as UPPCO's
16 share of the cost to bring the Au Train facility into FERC compliance,
17
- 18 2. \$1.15 million that UPPCO would receive from the buyer for the sale of the Au
19 Train Facility, and
20
- 21 3. The cost of the purchase power agreement that UPPCO would execute with
22 UP Hydro.
23

24 **Q. What costs were included in Option 1 and Option 4?**

25 A. Exhibit A-9 (GAC-1) pages 3 and 4 detail the costs of Option 1 and Option 4. These
26 cost estimates were prepared and provided by company subject experts.

27

28 **Q. What were your conclusions?**

29 A. Option 3 (Selling the facility to a party that would accept a transfer of the FERC
30 license and continue to operate the facility) results in the lowest PVRR, and therefore
31 results in the lowest costs to UPPCO's customers over the life of the project.

1

2 **Q. Does this complete your pre-filed direct testimony?**

3 A. Yes, it does.

UPPCO - Au Train Hydro Project Analysis
January 2010 Update

2010 NPV Revenue Requirement - \$Million

		<u>Base</u>	<u>Best</u>	<u>Worst</u>
		<u>Case</u>	<u>Case</u>	<u>Case</u>
Option 3 - Sale of Facility	\$8.5	\$8.5	\$8.5	\$8.5
Option 1 - Abandon Facility	\$11.1	\$11.1	\$9.3	\$14.8
Option 4 - Upgrade Facility	\$17.7	\$17.7	\$15.3	\$21.5

UPPCO - Au Train Hydro Project Analysis
January 2010 Update

Data and Assumptions

	<u>Base Case</u>	<u>Base Case</u>	<u>Best Case</u>	<u>Worst Case</u>
	1	1	2	3
<u>Common Assumptions</u>				
Project Start	Jan-10	Jan-10		
End of License Term	Jun-37	Jun-37		
Inputs Price Level	2009	2009		
Escalation	1.50%	1.50%		
Discount Rate	9.00%	9.00%		
PV Basis (Jan)	2010	2010		
1/2010 Net Book Value	\$1,557,037	\$1,557,037		
1/2010 CWIP Balance	\$790,135	\$790,135		
CWIP in Rate Base	50%	50%		
Existing Plant Property Tax	\$20,320	\$20,320		
Property Tax Growth Rate	2.20%	2.20%		
Tax Depreciation	1	1		
Regulatory Amortization Period	10	10		
<u>Capacity and Energy Ratings</u>				
Capacity Rating (kW)	419.0	419.0	419.0	419.0
Annual Energy Production (MWH)	5,033.1	5,033.1	5,033.1	5,033.1
Renewable Credits (First Year)	2009	2009	2009	2009
CO2 Credits (First Year)	2100	2100	2100	2100
<u>Sale - Option 3</u>				
Sale Price	\$1,150,000	\$1,150,000	\$1,150,000	\$1,150,000
Additional Investment	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
Construction Period	2	2		
Regulatory Amortization Period	10	10		
PPA Term	10	10		
On-peak Energy Rate (2010\$)	\$72.93	\$72.93	\$72.93	\$72.93
Off-peak Energy Rate (2010\$)	\$37.51	\$37.51	\$37.51	\$37.51
PPA Energy Escalation	3.00%	3.00%	3.00%	3.00%
REC Rate (2010\$)	\$7.00	\$7.00	\$7.00	\$7.00
REC Escalation	3.00%	3.00%	3.00%	3.00%
Tax Expense		Year of Sale		
<u>Rebuild - Option 4</u>				
Additional Investment	\$8,500,000	\$8,500,000	\$6,700,000	\$11,300,000
Construction Period	2	2		
Annual O&M	\$251,000	\$251,000	\$251,000	\$251,000
Periodic O&M				
Future CAPEX				
Book Depreciation		Remaining License Period		
Tax Depreciation		MACRS 20 year		
<u>Abandonment - Option 1</u>				
Additional Investment	\$3,901,250	\$3,901,250	\$1,950,625	\$7,802,500
Construction Period	3	3		
Regulatory Amortization Period	10	10		
Tax Depreciation	1	1		
<u>Land Value</u>				
Project Lands (Abandon Only)	\$6,500,000	\$6,500,000	\$6,500,000	\$6,500,000
Non-Project Lands	\$3,200,000	\$3,200,000	\$3,200,000	\$3,200,000

Line #

Cost Scenarios of License Surrender and Abandonment of Au Train Hydroelectric Facility				
Option 1				
	Base Case	Best Case	Worse Case	
4	MDEQ/Corps Permit application	\$10,000	\$5,000	\$20,000
5	Compile and Submit FERC Surrender Application	\$80,000	\$40,000	\$160,000
6	Meetings and Consultation	\$16,000	\$8,000	\$32,000
7	Water Quality Monitoring Program	\$50,000	\$25,000	\$100,000
8	Baseline Fisheries and Habitat Survey	\$50,000	\$25,000	\$100,000
9	Aquatic RTE Species Information Request and Report	\$2,000	\$1,000	\$4,000
10	Pre-and Post-Stream Channel Monitoring	\$80,000	\$40,000	\$160,000
11	Desktop Wetland and Aquatic Cover Type Study	\$12,000	\$6,000	\$24,000
12	RTE Species Survey and Report	\$20,000	\$10,000	\$40,000
13	Phase I Site Survey and Report	\$30,000	\$15,000	\$60,000
14	Landowner Negotiations and Public Meetings	\$14,000	\$7,000	\$28,000
15	Recreational Use Survey Update	\$20,000	\$10,000	\$40,000
16	Turbidity, water clarity, and erosion monitoring	\$50,000	\$25,000	\$100,000
17	Sediment Depth Study and Report	\$30,000	\$15,000	\$60,000
18	Stranded Fish and Mussel Relocation	\$30,000	\$15,000	\$60,000
19	Wildlife Habitat Mitigation	\$9,000	\$4,500	\$18,000
20	Planting Plan and Implementation	\$200,000	\$100,000	\$400,000
21	Construction of New Public Boat Access	\$100,000	\$50,000	\$200,000
22	Campground Relocation or Monetary Subsidy to MDNR	\$30,000	\$15,000	\$60,000
23	Concrete Spillway Removal	\$680,000	\$340,000	\$1,360,000
24	Electrical Removal	\$70,000	\$35,000	\$140,000
25	Penstock and Surge Tank Removal	\$370,000	\$185,000	\$740,000
26	South Levee Removal	\$580,000	\$290,000	\$1,160,000
27	North Dam Embankment Removal	\$220,000	\$110,000	\$440,000
28	Topsoil and Seeding (structure site only)	\$110,000	\$55,000	\$220,000
29	Powerhouse Removal	\$174,000	\$87,000	\$348,000
30	Turbine and Generator Removal	\$84,000	\$42,000	\$168,000
31	Contingency	\$780,250	\$390,125	\$1,560,500
32	Estimated Total Project Cost	\$3,901,250	\$1,950,625	\$7,802,500

Line #

1 **Cost Scenarios for Rebuild of Au Train Hydroelectric Facility**

2 **Option 4**

3		Base Case	Best Case	Worse Case
4	Preliminary engineering	\$250,000	\$150,000	\$350,000
5	Site soil borings and survey	\$200,000	\$125,000	\$500,000
6	Detailed design and engineering	\$950,000	\$800,000	\$1,250,000
7	Mobilization and demobilization	\$125,000	\$125,000	\$150,000
8	Erosion control	\$70,000	\$65,000	\$75,000
9	Cofferdam and water management	\$450,000	\$350,000	\$625,000
10	Demolition and topsoil stripping	\$50,000	\$25,000	\$100,000
11	Spillway excavation	\$250,000	\$150,000	\$350,000
12	Sheet pile cut off wall	\$350,000	\$225,000	\$450,000
13	Concrete wing walls	\$325,000	\$200,000	\$450,000
14	Concrete spillway	\$500,000	\$350,000	\$650,000
15	Concrete apron	\$150,000	\$75,000	\$200,000
16	Embankment construction	\$425,000	\$325,000	\$600,000
17	Rip rap	\$100,000	\$75,000	\$200,000
18	Access roads	\$50,000	\$35,000	\$75,000
19	Instrumentation wells	\$75,000	\$50,000	\$100,000
20	Site restoration	\$100,000	\$70,000	\$175,000
21	Construction facilities	\$600,000	\$500,000	\$750,000
22	Site construction manager	\$250,000	\$200,000	\$300,000
23	Project management	\$600,000	\$550,000	\$750,000
24	AFUDC	\$600,000	\$500,000	\$850,000
25	Quality Control and testing	\$750,000	\$650,000	\$900,000
26	Contingency	\$1,280,000	\$1,105,000	\$1,450,000
27	<i>Estimated Total Project Cost</i>	<u>\$8,500,000</u>	<u>\$6,700,000</u>	<u>\$11,300,000</u>