

Case No. 14-0403-EL-REN
Mother Ann Lee Hydroelectric Station
Staff Interrogatories – Set #2

Question 1: The meter photo provided with the application was a bit unclear. Can you please provide another photo of the meter, one that clearly shows the meter's serial number?

Answer 1:

It is very difficult to get a clear picture of the meter's serial number. The meter has a plastic cover that became hazy after the cabinet containing it was being painted with epoxy paint, and some got on the meter cover and was cleaned off with a powerful solvent. The cover cannot be removed without breaking the utility seal.

We have attached two photos that are hopefully better. The first, "Mother Ann Lee meter - Main Meter.JPG", is a photo of the entire meter, and the second, "Mother Ann Lee meter - Model number.JPG", is a close-up of the serial number and model number. While this is not clear, you can make out the following:

S/N 66 16 06871
Model JS-05R6120-43

If this response is still not adequate, we can provide an affidavit that these are the numbers on the meter, or have our utility, East Kentucky Power Cooperative, come out to the plant and remove the meter cover to obtain a clearer photo.

Question 2: Please confirm that the meter described in response to Question N of the application is the meter used to measure the facility's gross output, while the auxiliary power used by the facility is measured by a separate meter.

Answer 2:

Yes, the meter described in Question N is the Main meter, which is pictured in the attached photo, "Mother Ann Lee meter - Main Meter.JPG". This meter records the gross production from the plant and is owned, tested and read remotely by East Kentucky Power Cooperative. There is a second meter shown in the attached photo, "Mother Ann Lee meter - Aux Power Meter.JPG", that meters the auxiliary power used to run the plant. The net power output reported to the PJM-EIS GATS system is the monthly reading of the Main meter minus the monthly reading of the Auxilliary Power meter. Both meters are remotely utility read, and we receive monthly reports on the readings, usually by the middle of the following month.

To understand the relative magnitude of the readings, the Main meter has a monthly average reading in the range of 700,000 kWh, and the Auxilliary Power meter has a monthly average reading in the range of 1,400 kWh (2 tenths of 1% of the Main meter reading). Thus the average net output we would report to GATS would be $700,000 - 1,400 = 698,600$ kWh (note that net output reported to GATS is in MWH's).

Question 3: In response to Question H on the application, you indicate that “The plant was in very bad condition. Since then, Lock 7 Hydro Partners has spent over \$2 million to get the abandoned plant operational again.” Please provide additional details on the major projects undertaken at the facility to resume operation, with an approximate cost for each such project.

Answer 3:

We do not have our accounting broken down into the amount spent on specific projects, but instead by month and year. Because most projects during the renovation have taken place at the same time as other projects, we cannot break costs down into specific project costs. Below is a list of the expenses by month and year:

Mother Ann Lee Station

Monthly Expenses

	SHLA Labor	SHLA Expenses	Other Expenses	Total Expenses
Pre-Construction Costs			\$47,769.86	\$47,769.86
March 2006	\$2,761.00	\$404.16	\$8,061.23	\$11,226.39
April 2006	\$9,168.50	\$758.60	\$0.00	\$9,927.10
May 2006	\$11,451.00	\$984.60	\$0.00	\$12,435.60
June 2006	\$12,721.50	\$3,397.49	\$0.00	\$16,118.99
July 2006	\$9,218.00	\$4,720.06	\$0.00	\$13,938.06
August 2006	\$7,078.50	\$1,196.36	\$0.00	\$8,274.86
September 2006	\$9,955.00	\$6,927.34	\$0.00	\$16,882.34
October 2006	\$7,425.00	\$2,678.48	\$8,510.10	\$18,613.58
November 2006	\$10,956.00	\$5,166.68	\$13,006.00	\$29,128.68
December 2006	\$6,743.00	\$4,212.31	\$0.00	\$10,955.31
TOTAL 2006	\$87,477.50	\$30,446.08	\$77,347.19	\$195,270.77
January 2007	\$7,177.50	\$3,469.22	\$5,630.00	\$16,276.72
February 2007	\$7,694.50	\$1,676.64	\$425.00	\$9,796.14
March 2007	\$10,873.50	\$5,254.82	\$0.00	\$16,128.32
April 2007	\$11,368.50	\$2,922.88	\$0.00	\$14,291.38
May 2007	\$11,132.00	\$2,268.46	\$0.00	\$13,400.46
June 2007	\$11,583.00	\$11,381.76	\$0.00	\$22,964.76
July 2007	\$8,679.00	\$5,591.61	\$0.00	\$14,270.61
August 2007	\$9,476.50	\$7,058.28	\$0.00	\$16,534.78
September 2007	\$12,028.50	\$3,860.66	\$0.00	\$15,889.16
October 2007	\$11,841.50	\$6,343.77	\$0.00	\$18,185.27
November 2007	\$11,687.50	\$3,282.95	\$6.00	\$14,976.45

December 2007	\$8,574.50	\$10,486.27	\$6.00	\$19,066.77
TOTAL 2007	\$122,116.50	\$63,597.32	\$6,067.00	\$191,780.82
January 2008	\$12,001.00	\$13,101.62	\$0.00	\$25,102.62
February 2008	\$11,407.00	\$5,826.21	\$0.00	\$17,233.21
March 2008	\$11,412.50	\$13,375.13	\$0.00	\$24,787.63
April 2008	\$8,695.50	\$3,999.51	\$0.00	\$12,695.01
May 2008	\$9,696.50	\$5,587.52	\$18,351.00	\$33,635.02
June 2008	\$10,730.50	\$6,063.91	\$0.00	\$16,794.41
July 2008	\$8,008.00	\$9,942.64	\$0.00	\$17,950.64
August 2008	\$8,948.50	\$7,149.21	\$30,982.00	\$47,079.71
September 2008	\$19,272.00	\$13,456.66	\$0.00	\$32,728.66
October 2008	\$9,526.00	\$12,172.97	\$17,330.54	\$39,029.51
November 2008	\$9,966.00	\$14,276.66	\$0.00	\$33,768.66
December 2008	\$12,298.00	\$7,283.66	\$0.00	\$19,581.66
TOTAL 2008	\$131,961.50	\$112,235.70	\$66,663.54	\$320,386.74
January 2009	\$14,228.50	\$23,484.42	\$9,681.00	\$47,393.92
February 2009	\$11,214.50	\$7,594.50	\$0.00	\$18,809.00
March 2009	\$13,816.00	\$11,259.09	\$8,300.00	\$33,375.09
April 2009	\$11,000.00	\$4,396.76	\$0.00	\$15,396.76
May 2009	\$6,611.00	\$5,077.76	\$0.00	\$11,688.76
June 2009	\$8,217.00	\$3,744.14	\$0.00	\$11,961.14
July 2009	\$9,878.00	\$18,419.72	\$30,524.00	\$58,821.72
August 2009	\$4,988.50	\$7,213.37	\$0.00	\$12,201.87
September 2009	\$10,972.50	\$6,148.09	\$90.66	\$17,211.25
October 2009	\$5,335.00	\$11,134.87	\$0.00	\$16,469.87
November 2009	\$7,243.50	\$4,342.86	\$0.00	\$11,586.36
December 2009	\$10,169.50	\$6,772.61	\$0.00	\$16,942.11
TOTAL 2009	\$113,674.00	\$109,588.19	\$48,595.66	\$271,857.85
January 2010	\$3,261.50	\$7,421.04	\$15,773.00	\$26,455.54
February 2010	\$7,925.50	\$3,970.95	\$0.00	\$11,896.45
March 2010	\$6,759.50	\$4,730.69	\$0.00	\$11,490.19
April 2010	\$5,368.00	\$4,684.24	\$0.00	\$10,052.24
May 2010	\$7,502.00	\$4,700.98	\$0.00	\$12,202.98
June 2010	\$9,751.50	\$13,188.21	\$0.00	\$22,939.71
July 2010	\$6,407.50	\$9,735.58	\$30.00	\$16,173.08
August 2010	\$5,725.00	\$8,653.09	\$7,723.00	\$22,101.09
September 2010	\$5,764.00	\$1,958.65	\$56,338.52	\$64,061.17
October 2010	\$10,131.00	\$10,659.03	\$0.00	\$20,790.03
November 2010	\$8,063.00	\$2,714.69	\$0.00	\$10,777.69
December 2010	\$5,852.00	\$18,949.79	\$0.00	\$24,801.79
TOTAL 2010	\$82,510.50	\$91,366.94	\$79,864.52	\$253,741.96

January 2011	\$6,561.50	\$9,665.45	\$0.00	\$16,226.95
February 2011	\$7,172.00	\$2,328.58	\$300.00	\$9,800.58
March 2011	\$5,291.00	\$2,130.70	\$0.00	\$7,421.70
April 2011	\$5,615.50	\$2,217.23	\$0.00	\$7,832.73
May 2011	\$3,239.50	\$3,347.71	\$0.00	\$6,587.21
June 2011	\$3,932.50	\$1,039.17	\$0.00	\$4,971.67
July 2011	\$5,868.50	\$6,317.27	\$0.00	\$12,185.77
August 2011	\$6,704.50	\$13,715.32	\$36,362.23	\$56,782.05
September 2011	\$7,304.00	\$6,221.41	\$0.00	\$13,525.41
October 2011	\$3,866.50	\$4,027.18	\$0.00	\$7,893.68
November 2011	\$3,146.00	\$9,344.36	\$0.00	\$12,490.36
December 2011	\$2,376.00	\$10,447.41	\$18,945.47	\$31,768.88
TOTAL 2011	\$61,077.50	\$70,801.79	\$55,607.70	\$187,486.99
January 2012	\$5,445.00	\$11,893.03	\$0.00	\$17,338.03
February 2012	\$3,278.00	\$2,160.66	\$0.00	\$5,438.66
March 2012	\$5,348.75	\$7,266.78	\$0.00	\$12,615.53
April 2012	\$3,286.25	\$2,229.83	\$0.00	\$5,516.08
May 2012	\$3,492.50	\$3,578.66	\$0.00	\$7,071.16
June 2012	\$5,362.50	\$2,276.15	\$25,000.00	\$32,638.65
July 2012	\$6,531.25	\$4,221.15	\$9,924.57	\$20,676.97
August 2012	\$3,361.88	\$10,149.66	\$38,340.38	\$51,851.92
September 2012	\$5,238.75	\$5,052.76	\$0.00	\$10,291.51
October 2012	\$9,425.63	\$23,820.35	\$4,245.00	\$37,490.98
November 2012	\$1,677.50	\$3,268.88	\$35,167.14	\$40,113.52
December 2012	\$4,647.50	\$4,393.76	\$34,234.94	\$43,276.20
TOTAL 2012	\$57,095.51	\$80,311.67	\$146,912.03	\$284,319.21
January 2013	\$2,756.88	\$17,132.89	\$0.00	\$19,889.77
February 2013	\$2,241.25	\$20,997.11	\$0.00	\$23,238.36
March 2013	\$2,598.75	\$17,792.80	\$0.00	\$20,391.55
April 2013	\$2,021.25	\$5,122.19	\$0.00	\$7,143.44
May 2013	\$2,612.50	\$1,614.89	\$0.00	\$4,227.39
June 2013	\$9,370.63	\$9,432.12	\$0.00	\$18,802.75
July 2013	\$2,619.38	\$5,069.47	\$0.00	\$7,688.85
August 2013	\$4,675.00	\$6,970.74	\$102,046.92	\$113,692.66
September 2013	\$22,907.50	\$12,906.00	\$2,925.28	\$38,738.78
October 2013	\$17,785.63	\$30,047.93	\$6,728.92	\$54,562.48
November 2013	\$10,986.25	\$14,056.53	\$98,114.12	\$123,156.90
December 2013	\$3,636.88	\$3,995.81	\$0.00	\$7,632.69
TOTAL 2013	\$84,211.90	\$145,138.48	\$209,815.24	\$439,165.62

January 2014	\$4,943.13	\$5,800.77	\$24,877.61	\$35,621.51
February 2014	\$2,103.75	\$6,581.76	\$8,300.00	\$16,985.51
March 2014	\$2,275.63	\$2,497.56	\$0.00	\$4,773.19
April 2014	\$2,358.13	\$5,492.88	\$0.00	\$7,851.01
May 2014				\$0.00
June 2014				\$0.00
July 2014				\$0.00
August 2014				\$0.00
September 2014				\$0.00
October 2014				\$0.00
November 2014				\$0.00
December 2014				\$0.00
TOTAL 2013	\$11,680.64	\$20,372.97	\$33,177.61	\$65,231.22

Lock 7 Hydro Partners, LLC Expenses

	SHLA Labor	SHLA Expenses	Other Expenses	Total Expenses
TOTAL 2006	\$87,477.50	\$30,446.08	\$77,347.19	\$195,270.77
TOTAL 2007	\$122,116.50	\$63,597.32	\$6,067.00	\$191,780.82
TOTAL 2008	\$131,961.50	\$112,235.70	\$66,663.54	\$320,386.74
TOTAL 2009	\$113,674.00	\$109,588.19	\$48,595.66	\$271,857.85
TOTAL 2010	\$82,510.50	\$91,366.94	\$79,864.52	\$253,741.96
TOTAL 2011	\$61,077.50	\$70,801.79	\$55,607.70	\$187,486.99
TOTAL 2012	\$57,095.51	\$80,311.67	\$146,912.03	\$284,319.21
TOTAL 2013	\$84,211.90	\$145,138.48	\$209,815.24	\$439,165.62
TOTAL 2014	\$11,680.64	\$20,372.97	\$33,177.61	\$65,231.22
GRAND TOTAL	\$740,124.91	\$703,486.17	\$690,872.88	\$2,144,009.96

Note: SLHA stands for Shaker Landing Hydro Associates, Inc., the contractor that is renovating and operating our plant.

As can be seen in the summary above, renovation work has continued to be substantial even after the plant was declared in-service at the end of 2008. The highest year so far has been 2013, due to the costs of rebuilding the Unit 2 runner. Renovation work will be continuing in the future.

Below is a list of some of the major projects that have been undertaken in the renovation of the Mother Ann Lee Hydroelectric Station. The list is far from complete because it does not include the hundreds of smaller projects that have also been done as part of the restoration. Some photos of the renovation can be seen at www.kyhydropower.com . It is impossible to assign a cost of each of these projects individually since most have stretched over many months and years and have overlapped each other:

- Install new roof
- Rebuild switchgear and controls (wet from roof leaks)
- Clean and dry Generator 3 windings – Megger test
- Clean mud out of turbine pit #3
- Repair turbine #3 including repair and replacement of broken parts
- Repair #3 governor
- Rebuild #2 and #1 governors
- Replace protective relays with microprocessor based system
- Replace PLC with new modern PLC
- Add temperature sensors to generators, intermediate bearings and oil cooling systems
- Install DO monitoring system
- Replace electro-mechanical auto-synchronizer with microprocessor based system
- Remove old “flop gates” and fabricate and install replacement head gate slot covers
- Replace collapsed trashrack sections
- Replace sub-station Main Breaker
- Replace sub-station Lightning Arrestors
- Install animal guards in sub-stations
- Paint and repair transformers
- Find and fix sub-station “faults”
- Clear transmission right-of-way
- Repair downed transmission line
- Clear debris from forebay that had built up over years of abandonment
- Repair concrete decks
- Replace concrete pier tops
- Repair gantry crane
- Repair boat barrier
- Install floating log boom system
- Clean and dry Generator 2 windings – Megger test
- Dewater and clear mud and debris from #2 turbine intake
- Clean mud out of turbine pit #2
- Repair turbine #2 including repair and replacement of broken parts
- Repair broken wicket gate #2
- Make new stainless shims for turbine guide bearing system
- Replace clam-shell buckets for clearing debris
- Build upper landing and trails for boat
- Build bridges for access trails
- Disassemble Generator #2 and fix problems with windings – reassemble

Repair problem with Generator #2 excitor and connections
Refurbish commutator rings and replace brushing on all three generators
Clean and dry Generator 1 windings – Megger test
Clean mud out of turbine pit #1
Dewater and clear mud and debris from #1 turbine intake
Repair turbine #1 including repair and replacement of broken parts
Realign Unit 1 shaft with special shim at turbine shaft coupling
Use portable lathe to machine turbine shaft #1
Install stainless split sleeve over machined shaft #1
Rebuild #1 bearing holder
Replace split sleeve Unit #1
Rebuild brakes – all three units
Replace intermediate bearing seals – all six units
Re-replace intermediate bearing seals – all six units with new system
Build automated excitation adjustment system – all three units
Build automatic generator guide bearing lubrication systems – all three units
Replace crane festoon wiring system
Clean and paint walls and ceilings
Clean and paint generators
Clean and paint governors and hydraulic system
Clean and paint switchgear cabinets
Replace plant back-up battery system
Replace battery back-up charging system
Install PC monitoring system
Install satellite internet system
Rebuild Unit 2 pit walls
Replace all six “Keyhole” covers for all three units
Rebuild Unit 2 turbine including replacement of turbine runner
Replace boat motor
Install clean-out pump system
Install camera security system
Install microprocessor based generator protection system on all three generators
Install cooling systems for PLC, PC and battery chargers

Question 4: In response to Question H on the application, you indicate that the plant was declared in-service on December 30, 2008. Is there formal significance to the declared in-service date, or is this a more informal date used for internal purposes?

Answer 4:

Yes. The declared In-service date was necessary to mark the point when the plant was fully functional and we could begin the ten year period receiving federal Production Tax Credits. On December 29, 2008, Unit 1 was started for the first time by us. We allowed the unit to run for 24 hours, to see if any problems developed. On December 30, 2008, when Unit 1 was determined to be working fine, with all three units running, the plant was declared commercially in-service. Production Tax Credits were taken on our 2008 tax forms for the power produced in the last 2 days of 2008. These tax credits will continue through December 29, 2018.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

5/6/2014 11:20:32 AM

in

Case No(s). 14-0403-EL-REN

Summary: Response Response to PUC Staff 2nd Data Request electronically filed by Mr. David H Brown Kinloch on behalf of Lock 7 Hydro Partners, LLC