

MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

**REVENUE REQUIREMENT
COST OF SERVICE**

APPENDIX 3

Other Staff Schedules

KANSAS CITY POWER & LIGHT COMPANY

CASE NO. ER-2016-0285

*Jefferson City, Missouri
November 2016*

Greenwood Central Solar Station
In-Service Test Criteria

1. All major construction work is complete.

Based on review of Schedule TMR-12 “In-service testing Report Greenwood Solar Plant” attached to Tim Rush’s testimony in ER-2016-0156, a walk-through was performed by KCPL and substantial completion was awarded on June 20, 2016.

2. All preoperational tests have been successfully completed.

Based on review of Schedule TMR-12 “In-service testing Report Greenwood Solar Plant” attached to Tim Rush’s testimony in ER-2016-0156 and response to Staff Data Request 280.2 in ER-2016-0285, preoperational tests have been successfully completed.

3. Facility successfully meets contract operational guarantees that are necessary for satisfactory completion of all other items in this list.

Applicable operational contract guarantees have been satisfied.

4. Upon observation of the facility for 72 consecutive hours, the facility will have demonstrated that when sunlight was shining on it during that period it produced power in a standard operating mode.

Based on data obtained from June 8, 2016 through June 10, 2016, the unit produced power when sunlight was shining on it.

5. Facility shall meet at least 95% of the guaranteed AC capacity based on the Capacity Test as outlined in the contract or amended contract. The Capacity Test shall determine the facility’s Corrected Capacity at the Design Point Conditions.

Based on data obtained from June 15, 2016, the facility met at least 95% of the guaranteed capacity based on the Capacity Test. The Capacity Test procedures were provided to Staff in response to Data Request 251 in ER-2016-0156.

6. Sufficient transmission/distribution interconnection facilities shall exist for the total plant design net electrical capacity at the time the facility is declared fully operational and used for service.

Based on the summary of the interconnection study provided in EA-2015-0256 compliance filing on March 3, 2016 and the “In-service testing Report Greenwood Solar

Plant” attached to the rebuttal testimony of Tim Rush in ER-2016-0156, there is sufficient interconnection facilities.

7. Sufficient transmission/distribution facilities shall exist for the total plant design net electrical capacity into the utility service territory at the time the facility is declared fully operational and used for service.

Based on the summary of the interconnection study provided in EA-2015-0256 compliance filing on March 3, 2016 and the “In-service testing Report Greenwood Solar Plant” attached to the rebuttal testimony of Tim Rush in ER-2016-0156, there is sufficient facilities.

KCP&L Case No. ER-2016-0285 Staff's Recommended Depreciation Rates, Update 11/22/2016

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) [Interim Only]	Composite Remaining Life	Depreciation Rate (%)
PRODUCTION PLANT						
STEAM PRODUCTION PLANT						
311.00	STRUCTURES AND IMPROVEMENTS				39.7	1.65
	HAWTHORN COMMON	Jun-55	100-S0.5	(4)	39.3	
	HAWTHORN UNIT 5	Jun-55	100-S0.5	(6)	38.2	
	HAWTHORN UNIT 9	Jun-45	100-S0.5	(3)	30.2	
	MONTROSE COMMON	Jun-21	100-S0.5	(1)	7.5	
	MONTROSE UNIT 2	Jun-21	100-S0.5	0		
	MONTROSE UNIT 3	Jun-21	100-S0.5	0		
	IATAN COMMON	Jun-70	100-S0.5	(7)	52.0	
	IATAN UNIT 1	Jun-40	100-S0.5	(3)	25.8	
	LACYGNE COMMON	Jun-40	100-S0.5	(2)	25.9	
	LACYGNE UNIT 1	Jun-40	100-S0.5	(4)	25.5	
	LACYGNE UNIT 2	Jun-40	100-S0.5	(3)	25.7	
	MISCELLANEOUS		100-S0.5	(20)	98.1	
312.00	BOILER PLANT EQUIPMENT				24.6	2.73
	HAWTHORN COMMON	Jun-55	55-R1	(6)	35.7	
	HAWTHORN UNIT 5	Jun-55	55-R1	(8)	34.7	
	HAWTHORN UNIT 9	Jun-45	55-R1	(6)	27.4	
	MONTROSE COMMON	Jun-21	55-R1	(1)	7.3	
	MONTROSE UNIT 2	Jun-21	55-R1	(1)	7.3	
	MONTROSE UNIT 3	Jun-21	55-R1	(1)	7.3	
	IATAN COMMON	Jun-70	55-R1	(11)	43.1	
	IATAN UNIT 1	Jun-40	55-R1	(5)	23.9	
	LACYGNE COMMON	Jun-40	55-R1	(5)	23.9	
	LACYGNE UNIT 1	Jun-40	55-R1	(5)	23.9	
	LACYGNE UNIT 2	Jun-40	55-R1	(7)	23.1	
	MISCELLANEOUS		55-R1	(20)		
	LACYGNE ENVIRONMENTAL EQUIP - 2015	Jun-40	55-R1	(3)	22.8	
312.01	BOILER PLANT EQUIPMENT - UNIT TRAINS		25-R2.5	25	18.2	2.77
312.02	BOILER PLANT EQUIPMENT- AQC				22.2	1.56
	HAWTHORN UNIT 5	Jun-55	55-R1	(7)	33.8	
	LACYGNE UNIT 1	Jun-55	55-R2	(7)	22.2	
314.00	TURBOGENERATOR UNITS				23.7	2.14
	HAWTHORN COMMON	Jun-55	60-R1.5	(4)	37.2	
	HAWTHORN UNIT 5	Jun-55	60-R1.5	(6)	34.5	
	HAWTHORN UNIT 9	Jun-45	60-R1.5	(3)	28.5	
	MONTROSE COMMON	Jun-21	60-R1.5	0	7.4	
	MONTROSE UNIT 2	Jun-21	60-R1.5	(1)	7.4	
	MONTROSE UNIT 3	Jun-21	60-R1.5	(1)	7.4	
	IATAN COMMON	Jun-70	60-R1.5	(7)	46.4	
	IATAN UNIT 1	Jun-40	60-R1.5	(4)	24.0	
	LACYGNE COMMON	Jun-40	60-R1.5	(3)	24.3	
	LACYGNE UNIT 1	Jun-40	60-R1.5	(4)	23.9	
	LACYGNE UNIT 2	Jun-40	60-R1.5	(5)	23.3	
	MISCELLANEOUS		60-R1.5	(15)		

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) [Interim Only]	Composite Remaining Life	Depreciation Rate (%)
315.00	ACCESSORY ELECTRIC EQUIPMENT				21.6	3.22
	HAWTHORN COMMON	Jun-55	55-S0.5	(6)	35.2	
	HAWTHORN UNIT 5	Jun-55	55-S0.5	(6)	34.2	
	HAWTHORN UNIT 9	Jun-45	55-S0.5	(5)	27.4	
	MONTROSE COMMON	Jun-21	55-S0.5	(1)	7.3	
	MONTROSE UNIT 2	Jun-21	55-S0.5	(1)	7.3	
	MONTROSE UNIT 3	Jun-21	55-S0.5	(1)	7.3	
	IATAN COMMON	Jun-70	55-S0.5	(9)	43.6	
	IATAN UNIT 1	Jun-40	55-S0.5	(4)	23.5	
	LACYGNE COMMON	Jun-40	55-S0.5	(4)	23.2	
	LACYGNE UNIT 1	Jun-40	55-S0.5	(5)	22.9	
	LACYGNE UNIT 2	Jun-40	55-S0.5	(4)	23.7	
	LACYGNE ENVIRONMENTAL EQUIP - 2015	Jul-40	55-S0.5	(2)	23.4	
	MISCELLANEOUS		55-S0.5	(10)	48.5	
316.00	MISCELLANEOUS POWER PLANT EQUIP				27.3	2.28
	HAWTHORN COMMON	Jun-55	55-S0.5	0	35.1	
	HAWTHORN UNIT 5	Jun-55	55-S0.5	0	31.0	
	HAWTHORN UNIT 9	Jun-45	55-S0.5	0	27.1	
	MONTROSE COMMON	Jun-21	55-S0.5	0	7.4	
	MONTROSE UNIT 2	Jun-21	55-S0.5	0		
	MONTROSE UNIT 3	Jun-21	55-S0.5	0		
	IATAN COMMON	Jun-70	55-S0.5	0	41.7	
	IATAN UNIT 1	Jun-40	55-S0.5	0	24.1	
	LACYGNE COMMON	Jun-40	55-S0.5	0	24.4	
	LACYGNE UNIT 1	Jun-40	55-S0.5	0	23.8	
	LACYGNE UNIT 2	Jun-40	55-S0.5	0	22.2	
	MISCELLANEOUS		55-S0.5	0	48.5	
	HAWTHORN UNIT 5 REBUILD					
311.02	STRUCTURES AND IMPROVEMENTS	Jun-55	100-S0.5	(5)	38.9	0.30
312.03	BOILER PLANT EQUIPMENT	Jun-55	55-R1	(8)	34.0	0.56
315.01	ACCESSORY ELECTRIC EQUIPMENT	Jun-55	55-S0.5	(9)	33.3	0.59
316.01	MISCELLANEOUS POWER PLANT EQUIP	Jun-55	55-S0.5	0	33.3	0.34
	IATAN UNIT 2					
311.04	STRUCTURES AND IMPROVEMENTS	Jun-70	100-S0.5	(6)	52.4	1.16
312.04	BOILER PLANT EQUIPMENT	Jun-70	55-R1	(10)	44.1	1.38
314.04	TURBOGENERATOR UNITS	Jun-70	60-R1.5	(7)	46.7	1.87
315.04	ACCESSORY ELECTRIC EQUIPMENT	Jun-70	55-S0.5	(8)	44.1	1.87
316.04	MISCELLANEOUS POWER PLANT EQUIP	Jun-70	55-S0.5	0	44.1	1.35
	NUCLEAR PRODUCTION PLANT					
321.00	STRUCTURES AND IMPROVEMENTS	Jun-45	100-S0.5	(1)	29.3	1.30
322.00	REACTOR PLANT EQUIPMENT	Jun-45	60-R2	(2)	27.3	1.58
323.00	TURBOGENERATOR UNITS	Jun-45	50-S1.5	(1)	26.2	2.25
324.00	ACCESSORY ELECTRIC EQUIPMENT	Jun-45	50-S1.5	0	23.0	2.12
325.00	MISCELLANEOUS POWER PLANT EQUIP	Jun-45	40-R0.5	0	23.9	3.16
328.00	REGULATORY DISALLOWANCES					1.60

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) [Interim Only]	Composite Remaining Life	Depreciation Rate (%)
OTHER PRODUCTION PLANT						
341.00	STRUCTURES AND IMPROVEMENTS				30.8	2.56
	NORTHEAST COMBUSTION TURBINES	Jun-40	70-R2.5	(1)	25.4	
	WEST GARDNER COMBUSTION TURBINES	Jun-48	70-R2.5	(1)	33.0	
	MIAMI COUNTY COMBUSTION TURBINES	Jun-48	70-R2.5	(1)	32.8	
	HAWTHORN UNIT 6	Jun-45	70-R2.5	(1)	30.0	
	HAWTHORN UNIT 7	Jun-45	70-R2.5	(1)	30.0	
	HAWTHORN UNIT 8	Jun-45	70-R2.5	(1)	30.0	
342.00	FUEL HOLDERS, PRODUCERS & ACCESSORIES				28.4	2.11
	NORTHEAST COMBUSTION TURBINES	Jun-40	50-R2.5	(4)	24.4	
	WEST GARDNER COMBUSTION TURBINES	Jun-48	50-R2.5	(3)	30.7	
	MIAMI COUNTY COMBUSTION TURBINES	Jun-48	50-R2.5	(3)	30.6	
	HAWTHORN UNIT 6	Jun-45	50-R2.5	(3)	28.1	
	HAWTHORN UNIT 7	Jun-45	50-R2.5	(3)	27.9	
	HAWTHORN UNIT 8	Jun-45	50-R2.5	(3)	27.9	
344.00	GENERATORS				28.4	2.00
	NORTHEAST COMBUSTION TURBINES	Jun-40	50-R1.5	(5)	22.3	
	WEST GARDNER COMBUSTION TURBINES	Jun-48	50-R1.5	(3)	29.6	
	MIAMI COUNTY COMBUSTION TURBINES	Jun-48	50-R1.5	(3)	29.6	
	HAWTHORN UNIT 6	Jun-45	50-R1.5	(3)	27.8	
	HAWTHORN UNIT 7	Jun-45	50-R1.5	(3)	27.1	
	HAWTHORN UNIT 8	Jun-45	50-R1.5	(3)	27.1	
345.00	ACCESSORY ELECTRIC EQUIPMENT				27.2	1.84
	NORTHEAST COMBUSTION TURBINES	Jun-40	45-R3	(8)	18.7	
	WEST GARDNER COMBUSTION TURBINES	Jun-48	45-R3	(4)	29.9	
	MIAMI COUNTY COMBUSTION TURBINES	Jun-48	45-R3	(4)	29.9	
	HAWTHORN UNIT 6	Jun-45	45-R3	(4)	27.4	
	HAWTHORN UNIT 7	Jun-45	45-R3	(4)	27.4	
	HAWTHORN UNIT 8	Jun-45	45-R3	(4)	27.5	
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT				23.6	4.19
	NORTHEAST COMBUSTION TURBINES	Jun-40	45-R2.5	0	23.3	
	WEST GARDNER COMBUSTION TURBINES	Jun-48	45-R2.5	0	31.8	

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) [Interim Only]	Composite Remaining Life	Depreciation Rate (%)
SOLAR PRODUCTION PLANT						
344.01	GENERATORS - SOLAR	Jun-33	45-R2	0	18.80	4.82
GREENWOOD SOLAR FACILITY (FROM ER-2016-0156 ORDERED RATES)						
341.00	STRUCTURES AND IMPROVEMENTS					5.26
344.01	GENERATORS					5.52
345.00	ACCESSORY ELECTRICAL EQUIPMENT					5.38
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT					5.19
WIND PRODUCTION PLANT						
341.02	STRUCTURES AND IMPROVEMENTS				16.3	4.31
	SPEARVILLE UNIT 1	Jun-30	70-R2.5	0	16.3	
	SPEARVILLE UNIT 2	Jun-30	70-R2.6	0	16.3	
344.02	GENERATORS				13.6	5.39
	SPEARVILLE COMMON	Jun-30	45-R2	0	15.9	
	SPEARVILLE UNIT 1	Jun-26	45-R2	(1)	12.1	
	SPEARVILLE UNIT 2	Jun-30	45-R2	(1)	16.0	
345.02	ACCESSORY ELECTRIC EQUIPMENT				15.4	6.07
	SPEARVILLE COMMON	Jun-30	40-R2.5	0	16.1	
	SPEARVILLE UNIT 1	Jun-26	40-R2.5	0	12.2	
346.02	MISCELLANEOUS POWER PLANT EQUIPMENT				18.0	5.00
	SPEARVILLE COMMON	Jun-30	35-S2.5	0	18.0	5.00

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) [Interim Only]	Composite Remaining Life	Depreciation Rate (%)
TRANSMISSION PLANT						
352.00	STRUCTURES AND IMPROVEMENTS		60-R3	(5)	37.8	1.98
353.00	STATION EQUIPMENT		55-R1	(10)	44.2	1.87
353.03	STATION EQUIPMENT- COMMUNICATION		25-S2.5	0	5.9	9.96
354.00	TOWERS AND FIXTURES		70-R4	(20)	38.4	0.88
355.00	POLES AND FIXTURES		52-R2	(50)	38.0	2.64
356.00	OVERHEAD CONDUCTORS AND DEVICES		55-R2.5	(25)	41.6	1.78
357.00	UNDERGROUND CONDUIT		65-R4	0	32.0	1.41
358.00	UNDERGROUND CONDUCTORS AND DEVICES		55-R4	0	28.8	0.68
DISTRIBUTION PLANT						
361.00	STRUCTURES AND IMPROVEMENTS		55-R2	(5)	41.3	1.32
362.00	STATION EQUIPMENT		52-R2	(5)	39.1	1.81
362.03	STATION EQUIPMENT- COMMUNICATION		25-S2.5	0	9.6	4.45
363.00	STORAGE BATTERY EQUIPMENT		10-L3	0	8.5	11.76
364.00	POLES, TOWERS AND FIXTURES		42-R2.5	(50)	29.3	3.37
365.00	OVERHEAD CONDUCTORS AND DEVICES		44-R1	(25)	31.4	3.08
366.00	UNDERGROUND CONDUIT		55-R2.5	(30)	38.0	2.91
367.00	UNDERGROUND CONDUCTORS AND DEVICES		51-R1.5	(10)	38.8	2.38
368.00	LINE TRANSFORMERS		37-R2	10	27.4	1.63
369.00	SERVICES		50-R2.5	(100)	34.0	4.44
370.00	METERS		40-R1.5	2	34.6	0.61
370.10	METERS-AMR (Auto Meter Read)	Jun-16	40-R1.5	2	33.8	0.00
370.20	METERS -AMI (Advanced Meter Infrastructure)		20-S2.5	2	19.5	4.91
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES		21-S1	(15)	20.5	0.05
373.00	STREET LIGHTING AND SIGNAL SYSTEMS		25-L0.5	(5)	18.4	3.75

Account	Description	Probable Retirement Date	Survivor Curve	Net Salvage (%) <i>[Interim Only]</i>	Composite Remaining Life	Depreciation Rate (%)
GENERAL PLANT						
390.00	STRUCTURES AND IMPROVEMENTS		45-R1.5	(20)	33.0	2.75
391.01	FURNITURE AND EQUIPMENT		20-SQ	0	11.9	5.00
391.01	FURNITURE AND EQUIP- WOLF CREEK		20-SQ	0	13.5	5.00
391.02	COMPUTER EQUIPMENT		8-SQ	0	5.3	12.50
TRANSPORTATION EQUIPMENT						
392.00	AUTOS		8-R2	25	0.0	9.38
392.01	LIGHT TRUCKS		7.5-L0.5	25	5.0	11.73
392.02	HEAVY TRUCKS		10-L2.5	25	6.1	9.94
392.03	TRACTORS		12-R2	25	4.9	5.68
392.04	TRAILERS		26-S0	25	21.5	1.36
393.00	STORES EQUIPMENT		25-SQ	0	14.1	4.00
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT		30-SQ	0	17.9	3.33
395.00	LABORATORY EQUIPMENT		30-SQ	0	17.8	3.33
396.00	POWER OPERATED EQUIPMENT		12-L2	15	7.6	7.94
397.00	COMMUNICATION EQUIPMENT		35-SQ	0	22.1	2.86
398.00	MISCELLANEOUS EQUIPMENT		30-SQ	0	17.0	3.33