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Missouri Public
Service Commission

Exhibit No. 217

OPC – Exhibit 217
Cash Working Capital portion of Staff
Report from ER-2014-0351 (pp. 50-54)
File No. WR-2023-0344

1 adjustments to the plant in service and depreciation reserve in order to eliminate these amounts
2 from cost of service. Since the Staff removed these compensation expenses from its cost of
3 service income statement (*see* Section IX. E. 2.), Staff is also making an adjustment to remove
4 these costs from rate base in this case.

5 *Staff Expert/Witness: Jermaine Green*

6 **C. Cash Working Capital (CWC)**

7 Cash Working Capital (CWC) is the amount of funding necessary for a utility to pay the
8 day-to-day expenses incurred in providing utility services to its customers. When a utility
9 expends funds in order to pay an expense necessary for the provision of service before its
10 customers provide any corresponding payment, the utility's shareholders are the source of the
11 funds. This shareholder funding represents a portion of the shareholders' total investment in the
12 utility, for which the shareholders are compensated by the inclusion of these funds in rate base.
13 By including these funds in rate base, the shareholders earn a return on the CWC-related funding
14 they have invested.

15 Conversely, customers supply CWC when they pay for electric services received
16 before the utility pays expenses incurred in providing that service. Utility customers are
17 compensated for the CWC they provide by a reduction to the utility's rate base. By removing
18 these funds from rate base, the utility earns no return on that funding which was supplied by
19 customers as CWC.

20 A positive CWC requirement indicates that, in the aggregate, the shareholders provided
21 the CWC for the test year. This means that, on average, the utility paid the expenses incurred to
22 provide the electric services to its customers before those customers had to pay the utility for the
23 provision of these utility services. A negative CWC requirement indicates that, in the aggregate,
24 the utility's customers provided the CWC for the test year. This means that, on average, the
25 customers paid for the utility's electric services before the utility paid the expenses that the
26 utility incurred to provide those services.

27 To determine the amount of CWC provided by both the customers and shareholders, Staff
28 performs a lead/lag study. The lead/lag study involves the analysis of the timing of when
29 expenses are paid to suppliers, employees, etc. and when the utility receives revenues from
30 customers for the services it provides.

1 Empire did not perform a lead/lag study specific to costs incurred during the test year
2 (12 months ending April 30, 2014) in this case, but instead utilized the revenue and expense lags
3 agreed to in Empire's last rate case, Case No. ER-2012-0345. Staff did not perform a complete
4 CWC analysis in this case either. However, Staff did review the revenue lag and expense lags
5 for fuel and purchased power in this case to determine whether those values should change from
6 the lags agreed to in Case No. ER-2012-0345. For all other lags contained in the CWC
7 Accounting Schedule, Staff utilized the CWC lags that were agreed to by Empire and Staff in
8 Empire's last case.

9 The revenue lag is the amount of time between the day the Company provides the utility
10 service, and the day it receives payment from the ratepayers for that service. Staff's overall
11 revenue lag in this case is the sum of three (3) subcomponents. They are as follows:

- 12 1. Usage Lag: The midpoint of average time elapsed from the beginning of the
13 first day of a service period through the last day of that service period;
- 14 2. Billing Lag: The period of time between the last day of the service period and
15 the day the bill for that service period is placed in the mail by the Company;
16 and
- 17 3. Collection Lag: The period of time between the day the bill is placed in the mail
18 by the Company and the day the Company receives payment from the customer
19 for the services provided.

20 Staff's recommended revenue lag in this case is presented as follows, and Staff's calculation for
21 each component will then be explained:

	Staff
Usage Lag	15.21
Billing Lag	2.84
Collection Lag	29.78
Total Revenue Lag	47.82

23 The usage lag was determined by dividing the number of days in a typical year (365) by the
24 number of months in a year (12) to yield the average number of days in a month (30.42). The
25 30.42 was then divided by two (2) to yield an average usage lag of 15.21 days. This further
26 calculation using two (2) as the divisor is necessary since the Company bills monthly and it is
27 assumed that service is delivered to the customer evenly throughout the month.
28

1 The billing lag is the time it takes between when the Company reads the meter and when
2 the bills are subsequently mailed to customers. As previously discussed, in the current case
3 Empire used the revenue and expense lags that were calculated in its last rate case. In that case,
4 Empire calculated the billing lag by measuring the time between the download date of the meter
5 data and the date the bill was placed in the mail each month for the test year (12-months ending
6 March 31, 2012). Empire used a billing lag of 4.15 days.

7 Staff calculated the billing lag using the customer billing information for the test year in
8 this case – the 12-month period ended April 30, 2014. Staff determined the billing lag for this
9 case by calculating the number of days between the last meter read dates to the date the bill was
10 placed in the mail for each month of the test year.

11 According to the Company's response to Staff Data Request No. 0171.10, all customer
12 accounts are billed on a cycle basis. Each meter reader is assigned one route per billing cycle and
13 is allowed up to five days from the download date to the last read date to complete the route.
14 After the route is uploaded into the billing system, the read goes through various parameter
15 checks. If the read is outside one of the parameters, it must be further reviewed, and approved or
16 corrected, within two days. Customer accounts that are scheduled to charge are processed
17 through the nightly batch process in the billing system. A statement is printed and mailed the
18 following work day unless the customer is on "auto draft" or has requested a different due date.

19 The routes that are read are accumulated daily based on the billing cycle and populated
20 into the Host Download File a week before the billing date to ensure adequate time to obtain a
21 meter read. Therefore, the readings are not necessarily billed after being uploaded to the billing
22 cycle. The Company holds the information until all meters in the cycle are read. This delay
23 between the "download date" and "last read date" increases the billing lag and the amount of
24 CWC required by Empire. Therefore, Staff has determined that the "last read date" provides a
25 more accurate endpoint for the billing lag calculations. Staff's calculations resulted in a billing
26 lag of 2.84 days.

27 The collection lag measures the number of days between mailing of the customer's bill
28 by the utility to the date the bill is paid by the customer. The collection lag was calculated by
29 using the "accounts receivable turnover" method. Staff determined the total receivables for the
30 Company's Missouri portion by subtracting the 12-month ending April 31, 2014 bad debt
31 percentage (.53%) from the accounts receivable ending balances for the same time period. The

1 receivables were then divided by 12-months to come up with the average receivables. The
2 collection lag was calculated by dividing the number of days in a year (365) by the accounts
3 receivable turnover (12.26 days). The collection lag for Empire is 29.78 days.

4 Empire used the same collection lag (27.91 days) from the last Case No. ER-2012-0351.

5 Staff determined that it was unlikely that the following lags had significantly changed
6 since Empire's last rate Case No. ER-2012-0345; therefore, Staff did not propose any changes to
7 the lag values for these items in the current case:

8 Payroll Expense
9 Federal Income Tax Withheld
10 FICA Taxes Withheld – Employee
11 State Income Tax Withheld
12 Employees 401K Withheld
13 Employers 401K Matching
14 Employers Life Insurance Matching
15 Employers Healthcare
16 Employers Accidental Death & Dismemberment
17 Employers Dental/Vision
18 Vacation
19 Pension & OPEB Expense
20 Cash Vouchers
21 Employer FICA
22 Federal Unemployment
23 State Unemployment
24 MO Gross Receipts Tax
25 Corporate Franchise Tax
26 Property Taxes
27 Sales Taxes
28 Gross Receipts Taxes
29 Income Tax
30 Federal Tax Offset
31 State Tax Offset

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City Tax Offset

Interest Expense Offset

The Staff performed its own lead/lag study on the following expense lags during the audit in this case: Fuel-Coal, Fuel-Gas, Fuel-Oil, and Purchased Power. Staff calculated expense lags in these areas because of the significant expense dollar amounts that were involved. The expense lag for the Coal, Gas, and Purchased Power was calculated by using the midpoint between invoice date and the date that Empire paid the invoice. The Staff's expense lag results were: Coal-15.07 days, Gas-37.61 days, Purchased Power-33.15 days. The expense lag used for oil was measured by calculating the amount of time between when Empire receives the fuel from suppliers and the date they make the payment for the fuel. The expense lag for oil is 11.49 days.

Staff determined on average the time needed to recover revenues from customers after service has been provided (the revenue lag), and the time the utility can delay payment expenses incurred in providing service to customers beyond the utility's receipt of the service (the expense lead or lag). For each significant expense that a utility incurs, a separate line item is devoted to it in the lead/lag study, and the expense lag calculated for that expense item is compared to the overall revenue lag of the utility. In this way, for each of the utility's major expense items, a determination can be made if investors or customers are providing the CWC for that item. The sum total of the CWC requirements for each line item in the lead/lag study is the overall CWC requirement of the utility. Whether the bottom line result from the study is positive or negative indicates whether CWC in the aggregate has been provided to the utility investors or customers. In conclusion, the results of the study performed by Staff resulted in a positive CWC requirement. This means that, in the aggregate, the shareholders have provided the CWC to the Company during the test year. Therefore, the shareholders should be compensated for the CWC that they provide through an increase to rate base.

The result of Staff's CWC analysis is reflected on Accounting Schedule 8, Cash Working Capital. Staff's CWC analysis result is also included as a line item in the Rate Base Accounting Schedule 2 in the section entitled "Add to Net Plant In Service." Other aspects of Staff's CWC analysis results are included in the Rate Base Schedule in the section entitled "Subtract From Net Plant" in the following line items: Federal Tax Offset, State Tax Offset, City Tax Offset and Interest Expense Offset.

Staff Expert/Witness: Ashley R. Sarver