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TO: Cost of Service Study Collaborative Participants

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Subject: Staff's Comments on the Draft COSS Models

First, I would like to express Staff's deep appreciation for the willingness of Edison, Consumers, and BAI to share their work products and expertise in this collaborative process. Their input has already made this collaborative a great success. I, also, want to thank all the participants for your initial comments and your patience while Staff prepared its comments.

Staff's collaborative consultant, Ralph Miller, has reviewed the three cost of service study (COSS) spreadsheets that have been provided to the collaborative by Detroit Edison, Consumers Energy, and Brubaker & Associates, Inc. (BAI). As a result of that review and after further discussion, Staff is suggesting some additional refinements to the Detroit Edison and Consumers Energy COSS models that may help other parties to use those models, and that will further narrow the relatively small differences between them and the BAI model. Staff also has identified some further questions about the model design for consideration and comment by the collaborative.

At the request of Staff, Mr. Miller has implemented some of the further changes that Staff suggests for consideration by the collaborative. He has made these changes on a trial basis in the Consumers COSS model, but not for the Detroit Edison model. A copy of the Consumers COSS model with these suggested modifications accompanies this memo (Accompanying Model). If the collaborative agrees that these changes are desirable, we expect to ask Consumers and Detroit Edison to complete the suggested changes for their models.

Suggested Changes to the Model

Staff's suggested changes include the following modifications to the "Input1" spreadsheet:

1. Add a column showing the aggregation of the input cost data to complete the Total Electric (Consumers) or Input Juris Electric (Edison) column, which at present appears only on the "Total" tab. Including a similar column in the Input1 spreadsheet would enable the user to obtain a complete picture of the Total Electric data when working with the inputs, and it would help to verify any data entry or changes to data entry. The suggested addition is column E on the Input1 tab of the Accompanying Model.
2. Calculate the functionalization of Total Electric costs on the Input1 tab. At present, the only place to find the functionalized costs is in the Total Electric columns on the Prod and Dist tabs. The functionalization appears in columns H, I, and J on the Input1 tab of the Accompanying Model.

- a. The data for functionalization of revenues comes from the Input2 tab, and is picked up in columns E, H, and J of Input1. Lines 195-201 were added to the Input2 tab to complete the functionalization of revenues there. All of the other information needed for the functionalization already appears on Input1. A few of the functionalization formulas had to be revised to use the data already on Input1, rather than work through the Prod and Dist tabs, but these revisions do not affect the results.
 - b. Restriction of the functionalization calculation to the Input1 tab eliminates the circularity that the Detroit Edison and Consumers models avoid by using an “Image” copied manually from the “Live” functionalization table.
 - c. In the Accompanying Model, the functionalization (and everything else) on the Input1 tab works even if the Total, Prod, and Dist spreadsheets are deleted completely.
3. Identify the allocation factors to be used for each line item of input cost. In the Accompanying Model, columns N, P, and R on the Input1 tab are copies of the values (and formats) — not the formulas — in the “Alloc” column (column F) on the Total, Prod, and Dist tabs. The copies of the factor numbers from the Prod and Dist tabs start at line 180, where the allocations begin.
 - a. Column F (“Allocator”) on Input1 of the Consumers COSS (column G in the Accompanying Model) is the functionalization factor; it is not used for the allocation of costs among customer classes.
 - b. Column J (“Alloc”) on Input1 of the Consumers COSS (column K in the Accompanying Model) has an allocation factor reference, but it is apparently not used in the model. The allocation factors actually used in the Prod, Dist, and Total tabs are in column F on each of those three tabs, and the cell entries there are input data, not formulas.
 - c. A review of the Accompanying Model shows that on a few lines, the allocation factors in columns K, N, P, and R are not all the same. Juxtaposition of these columns on the Input1 tab helps to identify the places where the differences occur, so they can be explained or addressed.
 4. Modify the “Alloc” columns on the Total, Prod, and Dist tabs to use the allocation factor designations added to the Input1 tab as columns N, P, and R. A user of the COSS model could then change the allocations by changing the factor references on Input1; at present, a user of the model must make any such changes directly onto the Prod, Dist, and/or Total tabs. This suggested change is not yet implemented in the Accompanying Model.

In addition to these specific suggestions for enhancing the COSS model, Staff also suggests consideration of the following questions, which could lead to some further

changes:

5. Would it also be helpful to add yet another column to the Input1 tab, showing the formulas for calculating all of the subtotals alongside the numerical data, as illustrated by the example in line 293 on the Accompanying Model? This information is useful mostly for a printed report of the input data, as someone working on the live spreadsheet can see the formulas in each cell. (If these formulas are added for printed reports, then it would also be desirable to have an initial column showing the row index for each line; that is provided in the Accompanying Model as column U on the Input1 tab.)
6. It appears that all of the class allocations in the BAI model are performed on the Prod and Dist tabs, and that the Total tab is just a cell-by-cell sum of the Prod and Dist tabs. In the Consumers and Edison models, the allocation process appears to occur also on the Total tab. Which approach is preferable?
 - a. Conceptually, the BAI approach is more flexible, because it allows independent choices for the allocation methods on the Prod and Dist tabs. If costs are allocated on the Total tab too, then there must be a specific arithmetic relationship among the three allocation factors (Total, Prod, and Dist) and the functionalization percentages for each line item, in order to make the allocation on the Total tab match the sum of the allocated amounts on the Prod and Dist tabs. This relationship is ordinarily achieved for most line items with typical allocation choices, but not always. It is not achieved for revenues, and the Consumers model gets around this problem by using special instructions for the revenue lines (290, 291, and 296).
 - b. Allocation directly on the Total tab has the advantage of enabling one to look only at the Total tab to understand the allocation of total costs. But with a large Choice program, that advantage may not be worth much.
 - c. As noted above, a few lines had to be added to the Input2 tab to complete the functionalization of revenues there. In the Consumers implementation, that functionalization is accomplished by an interaction of the revenue lines on the Total, Prod, and Dist tabs. The additional lines on Input2 would make it possible to develop the revenue amounts on the Prod and Dist tabs without first calculating revenues on the Total tab.
7. Would it be desirable show absolute numbers, not percentages, as the input for each allocation factor, and then show the percentages calculated on a second line? This question applies specifically to the number of customers and to the class demand and energy allocation factors. It appears that there are no source notes for these allocation factors, and the absolute quantities would be easier for a user to relate to other data in a rate case. The BAI model provides the absolute quantities in the Input Allocation Schedules on the DistFactorCalc and ProdFactorCalc tabs.

8. There is a similar question about the presentation of internally calculated allocation factors, based upon subtotals of previously calculated lines in the COSS. The BAI model includes a line showing the calculated subtotal, then a second line for the allocation factor. (See the Calculated Allocation Schedules on the DistFactorCalc and ProdFactorCalc tabs.) It may be safer and easier to set up the model this way, especially if the subtotal is not displayed as a line in the COSS, as with BAI factor 600, O&M expense excluding fuel and purchased power. There is less need for an added line when the calculated allocation factor is based on an already calculated subtotal, such as BAI factor 500, PIS.
9. Some allocation factors are obtained by recognizing only some, but not all, of the customer classes. Examples are the various subgroups of customers, and class loads at secondary voltage. Would it be appropriate to standardize the method for calculating these allocation factors?
 - a. One possibility is to use a mask (a row of zeros and ones, indicating which classes are included in the allocation factor, and which are not). The formula would then be a standard multiplication of the unmasked factor (or unmasked absolute input quantities such as number of customers) times the mask on a column-by-column basis, divided by the sum of the products across all rows. A possible advantage is that the formula would be the same for all masked factors; only the row number of the unmasked factor and the row number of the mask would change.
 - b. Masks also work nicely for weighted customers, with class weights instead of ones for the included classes.
 - c. An alternative would be to add a row for the absolute quantities used for each factor after masking (*e.g.*, showing the loads at secondary voltage, with zero for classes served at higher voltage).

Next Step

The next step in this process will be to give everyone some time to consider and comment on Ralph Miller's suggested changes (modifications) to the models. I know that most of the participants in this collaborative have very busy schedules, so it may be most expedient to have Detroit Edison and Consumers comment first on the feasibility of Ralph's suggestions and then we can take up any additional comments that the rest of the participants may have. I would like to set the date for those comments as **September 8th**. If anyone else would like to comment on Ralph's suggestions, please send them out to the group by September 8th, too. In the meantime it would be useful to get some feedback on the Attorney General's comments as well.

Thanks, again to Edison, Consumers, and others for their input so far.