

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY)
UTILITIES COMPANY FOR AN ADJUSTMENT)
OF ITS ELECTRIC RATES AND FOR CERTIFICATES) CASE NO. 2016-00370
OF PUBLIC CONVENIENCE AND NECESSITY)

**THE ATTORNEY GENERAL'S RESPONSES TO DATA REQUESTS OF
KENTUCKY UTILITIES COMPANY, INC.**

Come now the intervenor, the Attorney General of the Commonwealth of Kentucky,
by and through his Office of Rate Intervention, and submits the following responses to data
requests of Kentucky Utilities Company, Inc.

Respectfully submitted,

ANDY BESHEAR
ATTORNEY GENERAL



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Certificate of Service and Filing

Counsel certifies that the foregoing is a true and accurate copy of the same document being filed in paper medium with the Commission within two business days; that the electronic filing has been transmitted to the Commission on March 31, 2017; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding.

This 31st day of March, 2017.



Assistant Attorney General

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WITNESS/RESPONDENT RESPONSIBLE

Paul Alvarez

REQUEST No.1

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Refer to the table on page 10 of Mr. Alvarez's testimony. Provide all documentation from the Ameren, ConEd, and Massachusetts Electric proceedings cited supporting the "Benefit Years" shown in the table, as well as citations to the pages in the provided documents where the information supporting the "Benefit Years" claimed by Mr. Alvarez may be found.

RESPONSE:

Please see attached files and pages:

1. Ameren Illinois Benefit-Cost Analysis.pdf. Page 39. Note that the 20-year benefit period incorporates an 8-year AMI deployment period.
2. ConEd AMI Plan.pdf. Pages 40-62. Note that the 20-year benefit period incorporates a 5-year AMI deployment period in addition to a 1-year planning period (for a total implementation period of 6 years).
3. National Grid Intro-Overview.pdf. Pages 104-110. Note the fourth bullet in section 6.3.1, page 105: "The Company used 15 years as the time horizon to discount costs and benefits for all STIP (short-term investment plan) investments."

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WITNESS/RESPONDENT RESPONSIBLE

Larry W. Holloway, P.E.

REQUEST No.2

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Provide a copy of all notes, data, and workpapers prepared by, or on behalf of, Mr. Holloway in connection with this proceeding, including workpapers used to generate any and all tables and exhibits. If any Excel spreadsheets or other computer generated documents were prepared by or on behalf of Mr. Holloway, please provide an electronic version of those documents with all formulas intact.

RESPONSE:

Objection. The question seeks information covered by the Attorney
-Client and/or Work Product privileges. Without waiver of this objection, See the following
spreadsheets, provided separately in electronic format:

DA.xlsx

Transmission.xlsx

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WITNESS/RESPONDENT RESPONSIBLE

Larry W. Holloway, P.E.

REQUEST No.3

Page 1 of 1

Refer to page 13, lines 14-16 of Mr. Holloway's testimony. Produce all empirical support, objective evidence, studies, or analyses serving as the basis for Mr. Holloway's assertion that levels of transmission maintenance expenditures should be relatively similar from year to year.

RESPONSE:

The level of transmission maintenance expenditures appears to be directly related to the inspection programs per KU and LG&E. In addition, the work appears to be directly related to the backlog, which is inspection driven. See page 10, lines 15 to 19 of Mr. Holloway's Testimony. This is based on the companies' own responses to discovery as noted in the referenced testimony.

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WITNESS/RESPONDENT RESPONSIBLE

Larry W. Holloway, P.E.

REQUEST No.4

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Produce all analyses or studies Mr. Holloway has performed or participated in developing regarding utility membership or affiliation with Independent Transmission Organizations, Independent System Operators or Regional Transmission Organizations.

RESPONSE:

In 2005 the Southwest Power Pool (SPP) and Kansas Transmission Owners (TOs) filed with the Kansas Corporation Commission (KCC) seeking that that KCC grant the SPP a Certificate for Convenience and Authority (CCA) to operate a Regional Transmission Organization (RTO) in the state of Kansas (KCC Docket Nos. 06-SPPE-202-COC & 06-WSEE-203-GIE) and that Kansas TOs place their transmission assets under the operational control of SPP and the SPP Open Access Transmission Tariff (OATT). Mr. Holloway was vice-Chairman of the SPP Cost Allocation Working Group (CAWG) at that time. This was a group formed by Staff members of state regulatory commissions in states affected by the formation of the SPP RTO. One of the CAWG's tasks was to assist and inform the SPP Regional State Committee (RSC), a group of SPP State regulators with specific authority under the SPP bylaws, to review and recommend an independent study regarding the benefits to each state and utility on the formation of the SPP RTO and the implementation of an Energy Imbalance Services (EIS) market. As a member of the CAWG, Mr. Holloway participated in the decision process to select Charles River Associates (CRA) to perform a cost benefit study of the SPP RTO EIS market. Mr. Holloway subsequently provided KCC Staff testimony regarding the SPP RTO applications in KCC Docket Nos. 06-SPPE-202-COC and 06-WSEE-203-GIE. All information pertaining to this docket, including the CRA study, the SPP testimony supporting the study and Mr. Holloway's testimony on behalf of KCC Staff is available on the KCC website at:

<http://estar.kcc.ks.gov/estar/portal/ksc/page/docket-docs/PSC/DocketDetails.aspx?DocketId=22e4e1b5-5cc4-4a69-b589-2a09681cfaa7>

Additionally, since 2011 Mr. Holloway has been a member of the SPP Market Operations and Policy Committee (MOPC). The SPP MOPC is a full participation committee that among other responsibilities, recommends changes in SPP's tariff, planning, expansion, market design, reliability and power supply policies to the SPP Board of Directors. The MOPC regularly reviews SPP studies related to costs and benefits of RTO participation, both generally and for specific customers, as well as studies and analysis related to long term planning and market changes. For more information see:

<https://www.spp.org/organizational-groups/board-of-directorsmembers-committee/markets-and-operations-policy-committee/>

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WITNESS/RESPONDENT RESPONSIBLE

Larry W. Holloway, P.E.

REQUEST No.5

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Refer to page 21, lines 4-6 of Mr. Holloway's testimony regarding Distribution Automation. Please describe and produce all empirical support, objective evidence, studies, or analyses serving as the basis for Mr. Holloway's assertion that the "DSCADA system vendor must be selected, the equipment purchased and installed and troubleshooting must occur before there is any need for the installation of SCADA capable reclosers."

RESPONSE:

See Mr. Holloway's testimony page 20, line 3 through page 22, line 11.

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WITNESS/RESPONDENT RESPONSIBLE

Ralph C. Smith

REQUEST No.6

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Provide a copy of all notes, data, and workpapers prepared by, or on behalf of, Mr. Smith in connection with this proceeding, including workpapers used to generate any and all tables and exhibits. If any Excel spreadsheets or other computer generated documents were prepared by or on behalf of Mr. Smith, please provide an electronic version of those documents with all formulas intact.

RESPONSE:

Objection. The question seeks information covered by the Attorney-Client and/or Work Product privileges. Without waiver of this objection, Mr. Smith states that his Exhibit workpapers in Excel were provided to the Company when his Direct Testimony was filed. See KU-AG Q6 Attachment 1 for Excel files for the tables in his testimony at pages 36 and 37 and KU-AG Q6 Attachment 2 for the tables in his testimony at page 44 for additional workpapers used to generate tables in the testimony.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.7

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Provide a copy of all notes, data, and workpapers prepared by, or on behalf of, Mr. Watkins in connection with this proceeding. If any Excel spreadsheets or other computer generated documents were prepared by or on behalf of Mr. Watkins, please provide an electronic version of those documents with all formulas intact.

RESPONSE:

Objection. The question seeks information covered by the Attorney-Client and/or Work Product privileges. Without waiver of this objection, Mr Watkins is providing the following documents:

TAI BIP KU Classification.xls
Schedule GAW-2.xls
CCOSS Summary GAW-13.xls
Customer Cost Analysis GAW-14.xls

In addition, the Excel workpapers and electronic spreadsheet relevant to class cost of service have previously been provided by the OAG.

See files:

KU_Zip_Code_Analysis.xlsx
KU_Seeyle_BIP_Corrected_for_Errors_with_100_percent_Demand.xls
KU_Seeyle_BIP_Corrected_for_Errors.xls
TAI_BIP_Primary_100_percent_Demand.xls
TAI_BIP_with_Customer-Demand_Split.xls
TAI_Prob_Dispatch_with_100_percent_Demand.xls
TAI_Prob_Dispatch_with_Time_Fuel_and_Customer-Demand_Split.xls
Completed_2_Probability_of_Dispatch_KU_-_Using_Depreciation_Reserve.xls
Completed_4_Probability_of_Dispatch_KU_-_Using_Gross_Plt.xls
Hourly_Fuel_Costs_KU_and_LGE_-_With_Source_and_Meter_-adjusted.xls

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.8

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For the table shown on page 39 of Mr. Watkins' testimony, provide the following:

- a. The source data used to compile the table;
- b. A detailed description all data used to compile the table;
- c. The excel workpapers and electronic spreadsheet used to compile the data.

RESPONSE:

- a. The data sources are as follows:
 1. Number of customers by zip code and rate schedule – KU response to OAG 1-292.
 2. Land Square Miles for each zip code – 2010 U.S. Census Gazetteer Files, Zip Code Tabulation Areas
Available at:
<https://www.census.gov/geo/maps-data/data/gazetteer2010.html>
- b. Number of customers by zip code and rate class are self-explanatory and were provided by KU. The area (square miles) of each zip code is also self-explanatory.
- c. The Excel workpapers and electronic spreadsheet relevant to this request has previously been provided by the OAG. See file: KU Zip Code Analysis.xlsx.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.9

Page 1 of 1

For the table shown on page 39 of Mr. Watkins' testimony, provide a detailed description of the methodology used to determine the customers per square mile for each zip code.

RESPONSE:

In calculating the number of customers per square mile for each zip code, Mr. Watkins summed the number of distribution customers (excluding Lighting) for each zip code and divided by total square miles for each zip code.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.10

Page 1 of 1

Provide a detailed description of the methodology used to define the strata definitions for the table shown on page 39 of Mr. Watkins' testimony. Specifically, explain the mathematical or statistical procedure used to develop the ranges used for the for the four strata; for example why Strata 1 included the range of 2 to 8 customers per square mile; why Strata 2 included the range of 8.1 to 14 customers per square mile; why Strata 3 included the range of 14.1 to 33 customers per square mile; and why Strata 4 covered the range of 33.1 to 3,700 customers per square mile.

RESPONSE:

Mr. Watkins used a standard technique of defining strata wherein an approximate equal number of zip codes are contained in each strata. As indicated in Mr. Watkins' testimony, the strata definitions are from least dense to most dense (in terms of number of total distribution customers excluding Lighting).

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.11

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Did Mr. Watkins perform an analysis of lineal miles of conductor for the strata identified in the table shown on page 39 of his testimony? If so, provide the analysis in Excel format.

RESPONSE:

No.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.12

Page 1 of 1

In compiling the table shown on page 39 of Mr. Watkins' testimony, please confirm that the numbers identified under "Count of Zip Codes" do not reflect the results an analysis of lineal miles of conductor for each stratum.

RESPONSE:

Confirmed. See response to Request No. 11.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.13

Page 1 of 1

Did Mr. Watkins perform an analysis of the number of transformers for the strata identified in the table shown on page 39 of his testimony? If so, provide the analysis in Excel format.

RESPONSE:

No.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.14

Page 1 of 1

In compiling the table shown on page 39 of Mr. Watkins' testimony, please confirm that the numbers identified under "Count of Zip Codes" do not reflect the results an analysis of number of transformers.

RESPONSE:

Confirmed. See response to Request No. 13.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.15

Page 1 of 1

Did Mr. Watkins perform an analysis of the investment in underground versus overhead distribution plant for the strata identified in the table shown on page 39 of his testimony? If so, provide the analysis in Excel format.

RESPONSE:

No.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.16

Page 1 of 1

In compiling the table shown on page 39 of Mr. Watkins' testimony, please confirm that the numbers identified under "Count of Zip Codes" do not reflect the results an analysis of overhead versus underground plant for each stratum.

RESPONSE:

Confirmed. See response to Request No. 15.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.17

Page 1 of 1

Confirm that Mr. Watkins performed no analysis of the cost differences between serving customers in urban areas and serving customers in rural areas.

RESPONSE:

Confirmed. See also Mr. Watkins' direct testimony, page 33, line 13 through page 34, line 12.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.18

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Confirm that Mr. Watkins performed no analysis of cost differences between areas or zip codes of the Company's service area with high customer density and areas or zip codes with low customer density.

RESPONSE:

Confirmed. See also Mr. Watkins' direct testimony, page 33, line 13 through page 34, line 12.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.19

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Please indicate whether Mr. Watkins performed an analysis to determine whether more than one electric utility provided service to customers in the zip codes used in his analysis. Specifically, did Mr. Watkins consider the number of customers in each zip code that are served by an electric cooperative, Duke Energy – Kentucky, Kentucky Power Company or TVA?

RESPONSE:

Mr. Watkins did not conduct any analysis to determine whether more one electric utility provided service to customers in the zip codes used in his analysis.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.20

Page 1 of 1

On Page 55, lines 6-7, Mr. Watkins states, "Regarding electricity usage, i.e., the level of kWh consumption is the best and most direct indicator of benefits received." Please explain in detail how kWh is a better indicator of benefits received than kW or some combination of kW and kWh.

RESPONSE:

Consumers utilize electricity to perform work. This includes lighting homes throughout the year, heating and cooling homes throughout the year, watching television over time, etc. By definition, energy (kWh) is the ability to perform work over time which then provides benefits to consumers. Power (kW) is how fast energy is transmitted. As a result, energy is equal to power multiplied by time. Power, in and of itself, is meaningless in terms of work performed or benefits obtained from electricity. Therefore, consumers receive benefits from the work performed by electricity (energy) and not the power (kW) required to drive electrical devices.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.21

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On Page 56, line 5-15, Mr. Watkins discusses volumetric based pricing and how he is unaware of any customers who purchase competitively-based transmission and generation services who pay a fixed charge. Please explain if any transmission and generation costs are considered customer-related costs in a cost of service study? If not, please explain how Mr. Watkins's discussion on page 56, lines 5-15, is pertinent to the recovery of customer-related distribution costs through a customer charge. Also, please provide instances where a utility's distribution services are priced on competitive basis.

RESPONSE:

For vertically integrated utilities, no transmission or generation costs are typically considered "customer-related" costs. For jurisdictions in which generation and transmission is deregulated or there is a competitive retail market, G&T providers also incur some of the costs typically considered "customer" costs as those confronted by distribution electric utilities. Examples include: customer billing, records and collections, and charges for metering (in some instances). However, Mr. Watkins' discussion pertains to Mr. Seeyle's and Mr. Conroy's opinion that fixed costs should be recovered largely from fixed charges. As clearly indicated in Mr. Watkins' testimony, G&T providers (in a competitive environment) also confront a large percentage in fixed costs in providing service yet, these competitive services are volumetrically priced.

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WITNESS/RESPONDENT RESPONSIBLE

Glenn A. Watkins

REQUEST No.22

Page 1 of 1

On Page 60, lines 6 – 26, Mr. Watkins discusses small volume customers. Please provide all data and analysis that supports Mr. Watkins' contention that small volume customers on KU's system use power more consistently and are "non- heating and air conditioning customers."

RESPONSE:

Mr. Watkins' statement on page 60, lines 6 through 26 is self-explanatory and is common knowledge to those knowledgeable in the field of residential electric usage characteristics. Mr. Watkins' statement is based on his knowledge and in depth analysis of customer load and usage patterns throughout the Country for other utilities over the course of his 37-year career. Furthermore, Mr. Watkins requested data specific to KU's residential customer's usage and load patterns in OAG 1-293 and the Company refused to provide the requested data. Nonetheless, it is obvious that a customer that uses energy consistently throughout the year will have a higher load factor than a customer that has a few months of high usage (heating and cooling season) and several months of much lower usage (non-heating/cooling season).

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WITNESS/RESPONDENT RESPONSIBLE

J. Randall Woolridge, Ph.D.

REQUEST No.23

Page 1 of 1

Does the adjustment factor used in Panel D of Exhibit JRW 5.1 result in an increase in short-term debt as a percentage of total debt? Does this overstate the amount of the adjustment?

RESPONSE:

No. Short-term debt is still 5.28% of total debt and so this does not overstate the amount of the adjustment.

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WITNESS/RESPONDENT RESPONSIBLE

J. Randall Woolridge, Ph.D.

REQUEST No.24

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Please provide copies of all electronic files used in the preparation of Dr. Woolridge's testimony exhibits with all data and formulas intact.

RESPONSE:

Dr. Woolridge's work papers, data and work sheets, and source documents are being uploaded separately to the Commission's website. These documents consist of the following:

	<u>Contents</u>
Articles	Copies of articles and studies used and cited in the Testimony, exhibits, and appendices, listed by Author's name and date of publication
Electric V-Lines, January 28, 2017	Copies of electric utility <i>Value Line</i> reports used in Exhibits
Work Sheets of	Copies of data and work sheets used in the development Dr. Woolridge's Exhibits. Dr. Woolridge's Exhibits have already been provided.

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WITNESS/RESPONDENT RESPONSIBLE

J. Randall Woolridge, Ph.D.

REQUEST No.25

Page 1 of 1

Please provide copies of all articles, publications, and other sources documents referenced in Dr. Woolridge's testimony and exhibits.

RESPONSE:

See response to QUESTION NO. 24. The articles, publications, and other sources documents referenced in Dr. Woolridge's testimony and exhibits are being uploaded separately, under the author's name and publication date.

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WITNESS/RESPONDENT RESPONSIBLE

J. Randall Woolridge, Ph.D.

REQUEST No.26

Page 1 of 1

Please provide a copy of the AUS Utilities Report relied on by Dr. Woolridge to prepare his testimony and referenced at page 25, lines 14-15. Please provide the most recent edition of this report in Dr. Woolridge's possession.

RESPONSE:

See response to QUESTION NO. 24. The requested document is being uploaded separately. The report ceased publication in September, 2016. This is the most recent edition of the report.

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WITNESS/RESPONDENT RESPONSIBLE

J. Randall Woolridge, Ph.D.

REQUEST No.27

Page 1 of 1

Reference page 43, lines 24-25. Please provide copies of all publications from investment firms that documents Dr. Woolridge's position that the three-stage DCF is a "common application for investment firms."

RESPONSE:

Dr. Woolridge has not performed an analysis of the DCF models of individual investment firms. His observations on this issue are based on years of teaching and research on issues related to Wall Street practices, including overseeing the placement of about 50 students per year in full-time and summer internship positions in analyst positions on Wall Street.

All investment valuation books include details of DCF valuation models, including the multi-stage DCF model. In the articles being uploaded as an attachment to these responses, Dr. Woolridge has provided two chapters on DCF valuation from Aswath Damodaran, a very well-known finance professor from NYU who has written extensively on stock valuation. Also, valuation websites include multi-period growth DCF models, which provide for the estimation of different growth rate for different time periods in the future, which are therefore multi-stage DCF models.

Damodaran's, (<http://people.stern.nyu.edu/adamodar/>),
LundholmSloan (<http://www.lundholmandsloan.com/index.html>) and
ValuePro (<http://www.valuepro.net/index.shtml>)

Finally, in the articles being uploaded separately, Dr. Woolridge also provides two recent studies by Green, Hand, and Zhang on the use of DCF valuation models by Wall Street firms. In the article entitled, "The Dual Use of Residual Income and Discounted Cash Flow Valuation Methods by U.S. Sell-Side Equity Analysts," on pages 4-5, the authors provide a summary literature review on the use of the DCF model by investment analysts. In the other article entitled, "A New Perspective on Analyst Sophistication: Errors and Dubious Judgments in Analysts' DCF Valuation Models," the authors highlight DCF application errors by Wall Street analysts based on their review of 120 analysts' reports over the 2012-13 time period. In both of these articles, the authors discuss alternative approaches to the estimation of terminal values in DCF valuations. The inclusion of a terminal value in a DCF valuation approach is a multi-stage model.