

Commonwealth Edison Company :
: ICC Docket No. 10-0467
Proposed general increase in electric rates :
:

**CORRECTED DIRECT TESTIMONY
OF**

HARRY L. TERHUNE

ON BEHALF OF THE COALITION TO

REQUEST EQUITABLE ALLOCATION OF COSTS TOGETHER

REACT

COMPRISED OF:

**A. FINKL & SONS, Co.
AUX SABLE LIQUID PRODUCTS, LP
THE CITY OF CHICAGO
COMMERCE ENERGY, INC.
FLINT HILLS RESOURCES, LP
FUTUREMARK PAPER COMPANY
INTEGRYS ENERGY SERVICES, INC.
INTERSTATE GAS SUPPLY OF ILLINOIS, INC.
THE METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO
PDV MIDWEST REFINING LLC
UNITED AIRLINES, INC.
WELLS MANUFACTURING, INC.**

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19

20 **Q. What is your occupation?**

21 A. I am an independent consultant. My firm is Terhune Consulting LLC, which
 22 began business in 2006, and my principal focus has been on consultation with
 23 electric utilities in relation to planning, operation, and reliability matters affecting
 24 their transmission and distribution systems. I have also contributed to the work of
 25 other consultants on their specific projects, including work for Edison
 26 International; Infrasource Technology (now part of Quanta Technologies); and R.
 27 M. Hansen & Associates (forensics).

28

29 **Q. Please summarize your educational background and professional experience.**

30 A. I graduated from the University of Notre Dame in 1967 with the degree of
 31 Bachelor of Science in Electrical Engineering, and from the Illinois Institute of
 32 Technology in 1975 with the degree of Master of Science in Electrical
 33 Engineering. I am a Professional Engineer licensed in the State of Illinois. For
 34 the period from 2000 until March, 2010, I was certified as a Reliability Operator
 35 by the North American Electric Reliability Corporation (“NERC”), the entity
 36 charged with enforcing transmission reliability rules. I am a Life Senior Member
 37 of the Institute of Electrical and Electronic Engineers and an Individual Member
 38 of CIGRE, the International Council on Large Electric Systems.

39

40 I was employed by ComEd for more than thirty-one (31) years, from 1967 to
 41 1998. During that period I held a wide variety of engineering and technical

42 management positions, starting as a field engineer and local area planner and
 43 ending as the Manager of the Transmission and Distribution Planning
 44 Department. In that role, I was responsible for planning for the entire ComEd
 45 transmission and distribution system, i.e. from the 765 kV transmission lines and
 46 substations down to service to local retail customer areas.

47

48 From 1998 until 2000, I was employed by the Mid-America Interconnected
 49 Network (MAIN) as its Assistant Executive Director; MAIN at that time was one
 50 of nine Regional Reliability Councils that made up NERC. From 2000 through
 51 2005 I was employed by American Transmission Company LLC (“ATC”), the
 52 owner and operator of the high-voltage electric transmission system in the Eastern
 53 two-thirds of Wisconsin, the Upper Peninsula of Michigan and a small portion of
 54 Illinois. At ATC I held the title of Vice President-Operations, and had
 55 responsibility for real-time operations, design and construction, maintenance and
 56 protection; and later, transmission planning. Since the beginning of 2006, I have
 57 been the owner and President of Terhune Consulting LLC.

58

59 A more detailed professional biography is attached to this testimony as REACT
 60 Exhibit 3.1.

61

62 **Q. During your employment with ComEd, did you gain any experience or work**
 63 **in any fields that are relevant to this testimony?**

64 A. Yes, the following areas of ComEd experience are particularly relevant:

- 65 • Engineer in field distribution design and local area distribution planning
66 (Chicago North Div. 1967-1969);
- 67 • Transmission planning (System Planning, 1969-1972);
- 68 • Division Engineer, as department head responsible for planning and design of
69 distribution facilities serving all classes of customers; Northern Div., 1976-
70 1977; Chicago Central Div. (including the Chicago Loop area), 1977-1982;
- 71 • Transmission and Distribution Training and Methods Superintendent, 1988-
72 1989;
- 73 • System Planning Manger, with responsibility for planning the high-voltage
74 system, including involvement with high-voltage customers, 1990-1997; and
- 75 • Transmission and Distribution Planning Manger, with responsibility for
76 planning both the transmission and distribution systems, 1997-1998.

77

78 **Q. Are you experienced in all elements of the energy delivery system from**
79 **power leaving the generator, through the transmission and distribution**
80 **systems, to ultimate delivery to retail customers at their utilization voltage?**

81 A. Yes. Of particular relevance is my experience with ComEd’s practices of
82 providing either Standard Service or, for a customer’s convenience and benefit,
83 providing “non-standard” or “optional” forms of service (“non-Standard
84 Service”). A key component of my work was ensuring that, while offering
85 individual customers flexible forms of non-Standard Service, other customers
86 receiving Standard Service from ComEd do not subsidize the additional costs
87 caused by customers receiving non-Standard Service. My experience with this
88 issue is directly relevant to cost allocation issues in this case. These practices are
89 particularly important for ComEd’s Extra Large Load class customers, who often
90 have need for unique service facilities that may differ from ComEd Standard
91 Service for customers with their demand characteristics.

92

93 **Q. What is your current relationship, if any, with ComEd or its parent, Exelon?**

94 A. I do not have an on-going professional relationship with ComEd or Exelon. I
95 receive certain retirement benefits and own a small amount of Exelon stock.

96

97 **Q. Please describe what parts of your ATC experience are relevant to this case.**

98 A. At ATC, I was periodically involved with transmission service arrangements to
99 the retail customers of ATC's local distribution companies, customers who
100 required high voltage service connections, and for which questions of standard
101 versus required service arose. Of course, because most of my work was based in
102 Wisconsin, the particulars were different, but the concepts remained similar.

103

104 **Q. Have you testified in a regulatory proceeding before?**

105 A. Yes. As a ComEd employee, I presented testimony to the Illinois Commerce
106 Commission ("Commission"), to committees of the Illinois legislature, and to the
107 Federal Energy Regulatory Commission ("FERC"). As an ATC employee I
108 presented testimony to the Public Service Commission of Wisconsin and to
109 FERC. A list of proceedings in which I have provided testimony is attached to
110 this testimony as REACT Exhibit 3.2.

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II.

PURPOSE AND GENERAL CONCLUSIONS

Q. What is the general purpose of your testimony?

A. The general purpose of my testimony is: (1) to discuss the allocation of retail delivery service costs to the Extra Large Load customer class, which allocation should only be based on assets and related expenses reasonably associated with service to that class; (2) to explain that under ComEd’s current and proposed tariff structure, the costs of the distribution system have been improperly over-allocated to the Extra Large Load customer class in violation of basic cost causation principles; and (3) to recommend to the Commission ways to correct this undue burden on the Extra Large Load customer class.

Q. How does your testimony approach those objectives?

A. First, I explain the relationship between the assets in ComEd’s transmission and distribution power delivery system and the customer classes served by that delivery system, with particular attention to the asset components applicable to Extra Large Load customer class.

I then provide guidance to the Commission on how the asset components applicable to the Extra Large Load customer class can be practicably identified. Once the assets are identified, the Commission can ensure that the Retail Delivery Service rates to the Extra Large Load customer class reflect the costs associated with those assets with reasonable accuracy. Equally important, I show how to

135 identify certain assets that would never -- absent separate justification -- be used
136 to provide Standard Service to the Extra Large Load customer class. The
137 significance of identifying those assets is that, absent special circumstance, the
138 Extra Large Load customer class would not have caused the costs associated with
139 those assets, and thus none of those assets' costs should be allocated to the Extra
140 Large Load customer class.

141

142 The discussion also involves an explanation of ComEd's concept of Standard
143 Retail Delivery Service ("Standard Service") to customers based on each
144 customer's demand characteristics, and ComEd's practice of segregating and
145 separately recovering the revenue requirements of "non-standard" or "optional"
146 assets to the extent that those revenue requirements exceed those of Standard
147 Service ("non-Standard Service"). By non-Standard Service assets, I mean assets
148 that ComEd provides for the benefit of an individual customer that are in excess
149 of or different from Standard Service. These costs of non-standard or optional
150 assets should be segregated from the costs for Standard Service to avoid having
151 customers taking Standard Service from subsidizing a customer taking non-
152 Standard Service. Conversely, because a non-standard customer is paying for the
153 non-standard assets individually, it is important that the costs of those assets not
154 be included in base rates – otherwise ComEd would be double recovering for the
155 same assets.

156

157 **Q. What should the Commission do to address this misallocation and double**
158 **recovery problem?**

159 A. The costs used to calculate the delivery services rates for the Extra Large Load
160 customer class should exclude any costs associated with assets that would not be
161 used to provide Standard Service to these customers. Extra Large Load customer
162 class members receiving Standard Service simply do not use certain types of
163 assets, and thus should not be charged for those assets. Furthermore, to the extent
164 that class members do use an excluded asset as part of non-Standard Service, they
165 already pay the full cost through Rider NS. Thus, in order to avoid double
166 counting, Extra Large Load customer class members should only be charged for a
167 fair portion of assets that could be used to provide Standard Service to the class.

168

169 **Q. Has ComEd identified the assets used to serve the Extra Large Load class?**

170 A. My understanding is that ComEd has refused to publicly provide that information.
171 However, as explained later, my understanding is that ComEd has the capability
172 to do so.

173

174 **Q. What should happen if ComEd continues to refuse to identify those assets?**

175 A. Based on cost causation principles and the reasonability of identifying assets used
176 to serve the class, ComEd should not allocate costs to the Extra Large Load
177 customer class that it cannot identify as being caused by this class.

178

179 A. **ComEd Should Recognize that Not All Assets Are Used to Serve the**
 180 **Extra Large Load Class**

181

182 Q. **Please categorize the key elements of the physical delivery chain that**
 183 **transports electricity from generators and external markets to end-use**
 184 **customers, and the relationship of those elements to ComEd’s customer**
 185 **classes.**

186 A. The following are the key elements relevant to the asset base upon which standard
 187 retail delivery service charges rest; my characterizations are general and there
 188 may be very limited exceptions:

189 1. **Bulk Electric System.** This consists of the extra-high voltage and high
 190 voltage interconnected system owned by ComEd which integrates generation
 191 resources and makes those resources available for delivery; this is the portion
 192 of ComEd delivery charges derived from FERC jurisdictional tariffs. All
 193 ComEd retail and wholesale customers benefit from the bulk electric system.
 194

195 2. **The Transmission Voltage Delivery System.** This consists of transmission
 196 facilities owned by ComEd at voltages from 345 kV through 69 kV (including
 197 69 kV) which transport power and energy from the bulk electric system to
 198 areas within the ComEd service territory, but which are not included in
 199 FERC-jurisdictional facilities. This system includes community (not
 200 individual customer) substation facilities that transform power between two or
 201 more transmission-level voltages. All ComEd retail customers benefit from
 202 the transmission voltage delivery system, as do certain wholesale customers
 203 (e.g. municipal electric systems) within the ComEd service territory.
 204

205 3. **Distribution Substation Facilities.** This consists of facilities that transform
 206 power from a transmission voltage to a primary distribution voltage (less than
 207 69 kV, higher than 2 kV)² to supply primary voltage distribution lines. All
 208 ComEd retail customers, except those receiving power to their property at a
 209 transmission voltage, benefit from distribution substation facilities.
 210

² Because of legacy practices from prior to the merger of Commonwealth Edison and the Public Service Company of Northern Illinois in the 1950’s, the nominal 4 kV system is typically 2160/3740 V in Chicago and 2400/4160 V outside Chicago; similarly the nominal 12 kV system may be 6900/12000 V in Chicago and 7200/12470 V outside Chicago, with exceptions around the fringes.

- 211 4. **Primary Distribution Lines** (also known as **Feeders** or **Circuits**). This
 212 consists of lines that transport power at a primary distribution voltage (e.g. 34
 213 kV, 12 kV, 4 kV) from a distribution substation to the vicinity of a customer’s
 214 property. ComEd retail customers benefit from primary distribution lines to
 215 different degrees depending upon their load characteristics and customer class.
 216
- 217 5. **Distribution Transformers**. This consists of transformers on or near
 218 customer property which transform power from a primary distribution voltage
 219 to a lower, generally secondary distribution voltage (e.g. a transformation
 220 from 12 kV to 480 V). Distribution transformers are characterized as
 221 “community transformers” when they are on public property, a ComEd right-
 222 of-way, or a ComEd easement, and are able to serve multiple customers; or as
 223 electric service stations (“ESS”), which are located on customer property and
 224 serve only that customer. Community transformers generally serve single or
 225 three-phase customers at voltages below 480 V. ESS transformers benefit
 226 only the customer on whose property they are located and that they serve.
 227
- 228 6. **Distribution Secondary Lines**. This consists of electric conductors, either
 229 single or three-phase, operating at a voltage below 2 kV (typically 120/240,
 230 208, or 480 V) on public property, a ComEd right-of-way, or a ComEd
 231 easement, that are able to serve multiple customers. Distribution secondary
 232 lines only benefit customers receiving secondary voltage service from
 233 community transformers.
 234
- 235 7. **Secondary Service Conductors**. This consists of conductors owned by
 236 ComEd and operating at secondary voltages, which connect community
 237 transformers or distribution secondary lines to an individual customer at the
 238 customer’s utilization voltage. Each secondary service conductor benefits
 239 only the customer to whom it is connected. Secondary service conductors
 240 from the transformer of an ESS to a customer at the customer’s utilization
 241 voltage are not owned by ComEd.
 242

243 **Q. You state that the above characterizations are for “standard” retail delivery**
 244 **service. What is “Standard Service”?**

245 **A.** Standard Service is a term defined in ComEd’s Terms and Conditions, on
 246 Original Sheet 155 as follows:

247 A standard distribution facilities installation provided by the
 248 Company for a retail customer includes distribution facilities
 249 adequate to provide, at a single delivery point, the electric power
 250 and energy required by such retail customer. However, in certain
 251 individual situations, more than one delivery point is provided in a

252 standard distribution facilities installation if the Company
 253 determines that the provision of such multiple delivery points is
 254 more economical, efficient or reliable than an installation with a
 255 single delivery point. . . . The electric power and energy
 256 requirements of a retail customer equal the highest MKD
 257 established by such retail customer during the twelve (12)
 258 preceding monthly billing periods at a power factor of not less than
 259 eighty-five percent (85%) lagging.

260 MKD means maximum kilowatts delivered.

261

262 **Q. Do all retail customers of ComEd receive Standard Service?**

263 A. No. ComEd has long had a policy of trying to be flexible in accommodating
 264 customers' service requirements, even if those requirements differ from Standard
 265 Service. ComEd has a mechanism, Rider NS, for recovery of costs related to
 266 provision of non-Standard Service. Rider NS provides a method of cost recovery
 267 for the assets related to non-Standard Service that are in excess of Standard
 268 Service. This recovery mechanism should protect all other customers from
 269 subsidizing the requirements of those customers who need non-Standard Service.

270

271 **Q. How is Standard Service determined for any customer class and for**
 272 **customers within that class?**

273 A. The General Terms and Conditions of ComEd's Tariff (Original Sheet No. 155),
 274 as noted above, provide:

275 A standard distribution facilities installation provided by the
 276 Company for a retail customer includes distribution facilities
 277 adequate to provide, at a single delivery point, the electric power
 278 and energy required by such customer. However in certain
 279 individual circumstances more than one delivery point is provided
 280 in a standard distribution facilities installation if the Company
 281 determines that the provision of such multiple delivery points is

282 more economical, efficient or reliable than an installation with a
 283 single delivery point.

284 Beginning on Sheet 166 of the Tariff, standard secondary service voltages are
 285 defined. Although ComEd Ex. 16.22 and 21.3 propose changes to Original Sheet
 286 155, my understanding from reviewing the proposed changes is that the language
 287 I quoted would remain unchanged.

288

289 **Q. In general, how do retail customer classes relate to the Standard Service**
 290 **voltages?**

291 A. Generally, the relationship between voltage and Standard Service is as follows:

- 292 • The residential classes receive single-phase three-wire service at
 293 120/240 V or 120/208 V.
- 294 • Nonresidential customers with up to 600 kW in any half-hour period are
 295 eligible to choose from among a variety of secondary service voltages;
 296 these are defined on Sheet 167 and range from 120 V, two phase wire to
 297 480 V, three or four phase wire service, plus a very limited option for
 298 deep-well pumps of 2400 V three-phase, 3-wire service. These secondary
 299 service voltage options apply to the nonresidential Small Load and
 300 Medium Load customer classes, and also Large Load class customers with
 301 between 400 and 600 kW of half-hour monthly demand.
- 302 • For all nonresidential customers in the Large Load and Very Large Load
 303 classes with half-hour demands in the range from 600 kW up to 4,500 kW
 304 the standard secondary service voltage is 277/480 V three phase, 4-wire.
- 305 • For nonresidential customers with demands which exceed 4500 kW, the
 306 Standard Service voltage is 2160/3740 V three phase or higher. This
 307 group includes the upper end of the Very Large Customer class (4,500 kW
 308 up to 10,000 kW). It also includes all customers of the Extra Large Load
 309 class (those with half-hour demands exceeding 10,000 kW).

310

311 **Q. What elements of the physical delivery chain that are used to provide**
 312 **Standard Service are normally used to provide electric service to all classes**
 313 **of customers?**

314 A. The relationships are generally as follows from the bulk electric system down
 315 through the primary distribution lines:

- 316 • All classes of customers utilize the bulk electric system and the
 317 transmission voltage delivery system.
- 318 • All customer classes except the High Voltage class customers (to the
 319 extent that they predominantly receive their electricity at a transmission
 320 level voltage, 69 kV or greater) utilize the distribution substations.
- 321 • All customer classes except the High Voltage class customers utilize the
 322 primary distribution lines to some extent.

323

324 **Q: When you refer to the High Voltage class, is that the same as the primary**
 325 **distribution class?**

326 A: Based on my reading of ComEd’s current Tariff Sheets, my understanding is that
 327 the High Voltage customer class exists today for customers taking delivery at or
 328 over 69 kV. (See Original Sheet No. 137.) My reference to the “High Voltage
 329 class,” however, is distinct from the concept of a primary delivery class discussed
 330 by ComEd in its Supplemental Direct Testimony. As reflected in ComEd Ex.
 331 21.0R and 21.3, ComEd has proposed -- and subsequently rejected -- the creation
 332 of a primary distribution class. However, costs for certain assets should be
 333 excluded from the delivery rates of the Extra Large Load customer class, and the
 334 creation of a primary class is one way of beginning to accomplish that goal.
 335 Although the some of the particulars are inappropriate, one iteration of a primary
 336 class is expressed in ComEd Ex. 21.0R and 21.3. Thus, my reference to the

337 “High Voltage class,” is to the class that currently exists; my references to
338 “primary distribution line customers” are to those customers who would be
339 members of the primary class, if it were to be created.

340

341 **Q. Do all customer classes except the High Voltage class utilize the primary**
342 **distribution lines to some extent?**

343 A. Yes. Primary distribution lines leave their source distribution substation utilizing
344 three-phase high-capacity “main stem” electrical conductors (wires or insulated
345 cables). As the lines progress out into the territory the high-capacity portions of
346 the lines may be connected (“tapped”) by lower capacity wires/cables serve
347 smaller loads, radially out from the high-capacity wires/cables. The lower
348 capacity “taps” may be either single or three-phase. The high-capacity portions of
349 two or more lines may be able to connect to each other to provide support in the
350 case of equipment failures, storms, etc.

351

352 All primary voltage customers benefit from the high-capacity “main stem”
353 portions of distribution lines. Customers receiving single-phase service voltage
354 may be connected to the lower-capacity “taps”, including taps that have only one
355 phase present. Nonresidential customers with standard three-phase service
356 generally require three-phase distribution lines and single-phase taps are
357 incapable of adequately providing that type of Standard Service.

358

359 **Q. In other words, not all portions of primary distribution lines are capable of**
360 **meeting the Standard Service requirements of all classes of loads?**

361 A. Correct. Not all portions of primary distribution lines are capable of serving all
362 standard varieties of secondary service voltages, which means that not all portions
363 of primary distribution lines are capable of meeting the Standard Service
364 requirements of all classes of loads. In particular, only assets with minimum
365 voltage, current-carrying capability and phase requirements are suitable to serve
366 the Extra Large Load customer class.

367

368 **Q. What are representative “main stem” normal capabilities of the common**
369 **ComEd primary distribution lines?**

370 A. Representative capabilities are, for 34 kV about 40,000 kVA or more; for 12 kV
371 about 8,000 kVA; and for 4 kV about 2,500 kVA. The term kVA, or kilovolt-
372 amperes, is a measure of the electric current burden on the delivery wires or
373 transformers and reflects that customer demands may be at power factors of up to
374 85% lagging; for example, a 10,000 kW load at unity (100%) power factor would
375 draw 10,000 kVA, but at 85% power factor the load would impose a demand on
376 the distribution system of about 11,750 kVA.

377

378 **Q. Looking at the Extra Large Load customer class (demand above 10,000 kW),**
379 **what common ComEd primary distribution line voltages are capable of**
380 **providing Standard Service to an Extra Large Load customer?**

381 A. Extra Large Load customer class customers would require 34 kV or 12 kV lines to
382 adequately provide Standard Service. As ComEd stated in its Response to Staff
383 Data Request PL 2.08:

384 The amount of electric power and energy required by a customer in
385 the Extra Large Delivery Class and Railroad Delivery Class would
386 qualify the customer for a primary voltage service connection
387 which would typically be a 12 kV or 34 kV service point in order
388 to provide enough capacity for a service connection at a single
389 delivery point or more than one service point to the same customer
390 property in some circumstances.

391 (Attached as REACT Exhibit 3.3.)

392

393 **Q. Would 12 kV single-phase or two-phase primary distribution lines ever be**
394 **adequate to supply Standard Service to an Extra Large Load customer class**
395 **customer?**

396 A. No. Three-phase service is standard for the Extra Large Load class of customer.

397

398 **Q. Would the portions of three-phase 12 kV distribution lines that have**
399 **conductors of a capacity significantly lower than the “main stem” capacity of**
400 **such lines ever be adequate to supply Standard Service to an Extra Large**
401 **Load customer class customer?**

402 A. No, not for a theoretical Standard Service. However, ComEd can, for its own
403 convenience, declare a non-Standard Service as standard; an example would be a
404 new customer taking over a site with prior non-Standard Service, where ComEd

405 found it more convenient to leave existing facilities in place rather than to replace
 406 the existing facilities with standard facilities. The fact that ComEd may elect in
 407 some instances to declare, as standard, facilities that would not normally be
 408 considered standard, for its own convenience, should not be the basis of an unfair
 409 generic allocation of such facilities to the Extra Large Load class of customers.

410

411 **Q. Would 4 kV three-phase or single-phase primary distribution lines ever be**
 412 **adequate to supply Standard Service to an Extra Large Load customer class**
 413 **customer?**

414 A. No.

415

416 **Q. Would secondary distribution lines, as you defined them above, ever be**
 417 **adequate to supply Standard Service to an Extra Large Load customer class**
 418 **customer?**

419 A. No.

420

421 **Q. Would secondary voltage service conductors from secondary distribution**
 422 **lines or a community transformer, as defined above, ever be adequate to**
 423 **supply Standard Service to an Extra Large Load customer class customer?**

424 A. No. Standard Service to an Extra Large Load customer class customer would be
 425 from an electric service station on customer property supplied by 12 kV or higher
 426 primary distribution lines; the customer pays for and owns the service conductors
 427 from the transformer in an electric service station into the customer's premises.

428

429 **Q. Would the categories of service above, to which you answered “no” with**
 430 **respect to Standard Service ever be used to provide non-Standard Service to**
 431 **an Extra Large Load customer class customer?**

432 A. The requirements of non-Standard Service often involve multiple voltages and
 433 forms of service connections, but Rider NS provides for payment of the
 434 incremental revenue requirements of non-Standard Service, above those of
 435 Standard Service, by the customer receiving such service. Thus, even if there are
 436 Extra Large customer class members that receive those types of services, it would
 437 be completely inappropriate to include these costs in developing the costs to be
 438 allocated to the class.

439

440 **B. ComEd Has Misallocated Asset Costs to Extra Large Load Class**
 441 **Customers**

442

443 **Q. What conclusions do you draw from the fact that the assets you describe**
 444 **above would not be adequate to provide Standard Service to Extra Large**
 445 **Load customer class customers?**

446 A. The following types of utility distribution plant should be excluded from cost
 447 allocations to the Extra Large Load customer class:

- 448 • Single-phase or two-phase primary voltage overhead or underground line
 449 sections;
- 450 • Any 4 kV primary voltage overhead or underground line sections;
- 451 • Any three-phase 12 kV overhead or underground line sections with
 452 conductor capability substantially less than “main stem” 12 kV line
 453 capability;

- 454 • Any secondary distribution line sections; and
- 455 • Any secondary voltage service conductors.

456 In other words, the costs recovered from the Extra Large Load customer class
 457 customers should not include the Distribution Secondary Lines, and Secondary
 458 Service Conductors, and selected assets in the Primary Distribution Lines
 459 discussed above.

460

461 **Q. Are these costs currently included in the costs allocated to the Extra Large**
 462 **Load customer class?**

463 A. Yes. In the Supplemental Direct Testimony of Mr. Alongi (ComEd Ex. 21.0R),
 464 under the category “Purposes of Testimony”, he notes that his supplemental
 465 testimony includes the Company’s effort to separately identify customers whose
 466 service enters their property at primary voltages versus secondary voltages. It
 467 appears that the tariffs proposed in ComEd Ex. 16.0R make no distinction by
 468 customer class among the primary and secondary service components.

469

470 **Q. Are you proposing to alter ComEd’s overall rate base or revenue**
 471 **requirement in any way?**

472 A. No. ComEd should be entitled to full recovery for costs incurred related to
 473 necessary and prudent investments. However, under my understanding of the
 474 Commission’s commitment to cost causation principles, assets that would never
 475 be used for Standard Service by the Extra Large Load class should not be paid
 476 from by that class, because Riders fully address costs related to non-Standard

477 Service. For that reason, the Extra Large Load customer class should not be
478 allocated any of the costs related to the assets described above.

479

480 **Q. Is it reasonable to ask ComEd to investigate the cost of providing Standard**
481 **Service to the Extra Large Load customer class?**

482 A. Although I am not a lawyer, I interpreted the Commission's Order in ICC Docket
483 No. 08-0532 to direct ComEd to modify its embedded cost of service study to
484 more accurately reflect the underlying cost drivers of allocation to each customer
485 class. The order gave particular attention to the Extra Large Load customer class.

486

487 In the present case, in the Supplemental Direct Testimony of ComEd Witness Mr.
488 Alongi (ComEd Ex. 21.0), Mr. Alongi is asked:

489 Can you describe the categories of costs in ComEd's compliant
490 primary/secondary analysis for which ComEd used actual available
491 data from its electronic systems and performed manual reviews
492 and the associated dollars related to each situation?

493 (ComEd Ex. 21.0 at 24:402-404.) In his answer, Mr. Alongi described an effort
494 by ComEd to utilize its electronic systems (e.g. ComEd's CEGIS geographic
495 information system) and manual inspection to examine, for example, the
496 proportion of utility poles supporting primary distribution conductors, secondary
497 distribution conductors, or a combination, in order to allocate not only the wire
498 involved but the poles, switches, lightning arresters, etc. to the appropriate
499 category. (*See id.* at 24:405-26:465.) The ComEd records also show conductor
500 sizes, number of conductors, number of phases, etc. present, as well as length of
501 conductor, etc. (*See id.*) The techniques ComEd employed to achieve the limited

502 objective of a primary/secondary asset split apparently could readily be applied to
503 determine what primary voltage facilities exist that are not appropriate to render
504 Standard Service to Extra Large Load class customers.

505

506 As the Commission is aware, the Public Utilities Act states, “Charges for delivery
507 services shall be cost based, and shall allow the electric utility to recover the costs
508 of providing delivery services through its charges to its delivery service customers
509 that use the facilities and services associated with such costs.” (220 ILCS 5/16-
510 108(c).) That statement regarding charges being “cost-based” calls for a higher
511 degree of fairness and accuracy in the allocation of revenue requirements to each
512 customer class. The misallocation of primary and secondary voltage line assets
513 which are generally inadequate to serve the standard requirements of Extra Large
514 Load class customers is egregiously unfair.

515

516 **Q. In your testimony thus far, you have focused on Standard Service to**
517 **customers in each customer class, and in particular to Standard Service to**
518 **Extra Large Load customer class customers; what about customers whose**
519 **service is non-standard?**

520 A. As noted at the beginning of my testimony, ComEd has an elaborate and precise
521 system for measuring the differences between a customer’s Standard Service and
522 that customer’s aggregate actual service requirements. ComEd’s Rider NS,
523 “Nonstandard Services and Facilities,” is the basis for determination of the cost of
524 nonstandard facilities, standard facilities, and determination of the differential to

525 be paid for by the customer with the nonstandard requirements. (*See* Original
526 Sheets No. 277-280.) The purpose of Rider NS is to permit flexibility of service
527 to the customer, while ensuring that other ComEd customers are not subsidizing
528 the non-standard needs of any particular customer. (*See, e.g.*, Original Sheet No.
529 277.) Rider NS should ensure that all of the differential between Standard Service
530 and the service requested by the customer is accounted for and paid by the
531 customer with non-standard assets. (*See id.*) This differential is made up by a
532 direct payment, (typically for installation costs, structures, wire, etc.) and/or a
533 monthly rental charge (typically for items of plant that could be removed and re-
534 used for another customer, such as transformers, switches, protective devices,
535 etc.). (*See, e.g., id;* 1st Revised Sheet No. 202.) ComEd has a similar system,
536 Rider ML, for lease of nonstandard metering assets.

537

538 While Rider NS protects the general population of ratepayers from subsidizing the
539 non-standard customer, it is also very important that the tariff treatment of the
540 non-standard customer not be used to subsidize other customers and customer
541 classes.

542

543 In the Extra Large Load customer class, many, if not all such customers have
544 some degree of non-Standard Service. That non-Standard Service may utilize
545 some of the types of facilities that should be excluded from the costs allocated to
546 the class. For example, a customer may have one or more principal points of
547 service, perhaps at the standard primary voltage (e.g. 12 kV) and secondary

548 utilization voltage (e.g. 2160/3740 V, three phase), but may also have other points
549 of service for signs, parking lot lighting, sewage pumping stations, or other
550 facilities. Many of these points of service, *i.e.*, those not serving the principal
551 points of service but which may incorporate the types of facilities that should be
552 excluded, should not be assigned to the Extra Large Load class customers. Those
553 non-standard costs would generally be covered by Rider NS. Because the
554 differential cost of non-Standard Service is already being fully paid by the
555 customer under Rider NS, only the charges to the customer under Rate RDS,
556 should apply to the revenue requirements of Standard Service. Stated another
557 way, the asset base used to allocate Extra Large Load class revenue requirements
558 should just include those assets used to provide Standard Service to the class.

559

560 **C. The Commission Should Address ComEd's Misallocation to Extra**
561 **Large Load Class**

562

563 **Q. What is your conclusion regarding how to change the current allocation**
564 **structure?**

565 A. The Extra Large Load customer class is currently being allocated a portion of all
566 delivery assets not directly assigned to individual customers. As explained above,
567 this leads to the Extra Large Load customer class paying for assets that class
568 members would never use as part of Standard Service. To the extent that some
569 class members might use a particular asset that does not fall within the Standard
570 Service for that class, the individual class members pay for those individual assets

571 through Rider NS. As a result, the class-wide delivery services rates should not
 572 include any assets that would not be used to provide Standard Service to the class.

573

574 **Q. What impact will this have on the allocation to the Extra Large Load**
 575 **customer class?**

576 A. Based upon the data that has been made available to date, it is not possible to
 577 quantify the number or cost of classes of assets that should be excluded from the
 578 delivery services rates for the Extra Large Load customer class.

579

580 **Q. Does ComEd have the ability to identify the assets you describe?**

581 A. ComEd should be able to identify the assets that should be excluded from the
 582 revenue requirements of the Extra Large Load customer class and reallocated to
 583 other, more appropriate classes. Based on my understanding of ComEd's CEGIS
 584 system, and my review of Mr. Alongi's testimony regarding the study ComEd
 585 undertook to create the exemplar primary/secondary split, it appears that ComEd
 586 has this capability.

587

588 **Q. To what degree should actual required distribution transformer installations**
 589 **be considered in applying Rate RDS?**

590 A. The Rate RDS transformer charges associated with the non-standard Extra Large
 591 Load customer class customer should only be based on the type of standard
 592 transformation appropriate to that customer's demand at a single point of delivery.
 593 My understanding is that all other transformer costs, including core losses, are

594 being paid for under Rider NS. (*See* Original Sheet No. 280.) The transformer
595 type applicable to the Extra Large Load customer class customer should be based
596 on the standard primary distribution voltage for that customer, with a secondary
597 voltage of 2160/3740 V, three phase (or higher) as defined in the General Terms
598 and Conditions on Original Sheet 168. The Extra Large Load customer class
599 customer should not be charged at each lower voltage at which it is actually
600 served, even for just the proportion of load at that voltage, as all the incremental
601 costs of non-Standard Service are covered by Rider NS and already paid by the
602 customer. Thus, because the Extra Large Load customer class members already
603 have paid for the losses related to non-Standard Service through Rider NS, the
604 class should only pay for the transformer charges necessary for them to receive
605 Standard Service.

606

607 **Q. To what extent should the principles that you have recommended above be**
608 **considered for High Voltage Class customers who meet the “greater than**
609 **10,000 kW” demand criterion of the Extra Large Load class?**

610 A. For the High Voltage class, the same principles of exclusion from revenue
611 requirements of plant equipment inappropriate for Standard Service to the
612 customer class should be applied to the retail delivery service charges to High
613 Voltage class customers over 10,000 kW demand.

614

615 **Q. What level of precision would you expect of ComEd in correcting any**
616 **misallocation to the various load classes, and particularly to the Extra Large**

617 **Load customer class (and the High Voltage class customers over 10,000 kW**
618 **demand)?**

619 A. It seems that ComEd made some initial efforts, as described by Mr. Alongi in his
620 supplemental testimony, toward the goal of allocating costs to the cost's causers.
621 These efforts show that ComEd has the ability to collect information that can
622 inform accurate cost allocation. A similarly detailed examination of plant
623 records, CEGIS geographic information system data, customer billing records, in-
624 house records of standard versus required facilities, etc. would provide a much
625 more transparent basis for a potentially reasonable set of allocation factors that
626 would exclude inappropriate costs from the rate base of the Extra Large Load
627 customer class and High Voltage classes, and reassign them as revenue
628 requirements properly allocated to other customer classes that actually use the
629 assets. My expectation is that ComEd can perform a study that can produce a
630 practicable, reasonable adjustment to the asset components genuinely driving the
631 Extra Large Load customer class revenue requirements. A detailed audit of every
632 wire, pole, cable, etc. is not required.

633

634 **Q. Do you believe ComEd should retain the High Voltage class?**

635 A. Yes. Retention of this class accomplishes the goals of cost causation that I have
636 discussed above for the customers with service at 69 kV and above, including
637 those with MKD above 10,000 kW.

638

639 **Q. Would creating a primary class helps accomplish those goals?**

640 A. As stated above, my review of ComEd testimony regarding what Mr. Alongi
641 refers to as the Exemplar primary class shows that ComEd was able to identify
642 and exclude secondary voltage distribution assets from the allocation to primary
643 class. This demonstrates a proof of concept with respect to ComEd's ability to
644 identify, classify and apply different types of assets to one or more customer
645 classes.

646

647 **Q. Does the primary/secondary proposal put forward by Mr. Alongi accomplish**
648 **the same goals as your proposals?**

649 A. While it takes some steps in the right direction, the proposal introduced by Mr.
650 Alongi does not go far enough. There are several types of assets that should never
651 be charged to the Extra Large Load customer class under standard delivery rates,
652 but Mr. Alongi's testimony is not clear as to whether those assets would be
653 excluded from the Extra Large Load customer class allocation or not.
654 Furthermore, for reasons set out above, Extra Large Load customer class
655 members should not be charged for community assets below 12 kV, three phase;
656 to the extent that this protection is not provided, ComEd's proposal should be
657 rejected.

658

659

III.

660

CONCLUSION661 **Q. Could you please summarize your testimony?**

662 A. There are certain groups of assets that the Extra Large Load customer class
663 customers would never use as part of receiving Standard Service. Thus, under the
664 principle that costs should be assigned to their causers, the Extra Large Load
665 customer class should not be charged for any of those assets in their delivery
666 services rates. Although some members of the Extra Large Load customer class
667 use assets other than those used to provide Standard Service, the Extra Large
668 customers already fully pay incremental revenue requirements for use of those
669 assets under Rider NS and Rider ML. As a result, even though some members of
670 the Extra Large Load customer class use assets that are not part of class-wide
671 Standard Service, the class delivery rates should not reflect **any** assets other than
672 those identified as used to provide Standard Service. For example, single-phase
673 primary and secondary underground residential distribution facilities should not
674 be included in the revenue requirement of an Extra Large Load class industrial
675 customer who requires three-phase service for a load in excess of 10,000 kW.

676

677 It is both necessary and feasible for ComEd to identify and exclude assets not
678 used to provide Standard Service to the Extra Large Load customer class.

679

680 **Q. Does this complete your testimony?**

681 A. Yes.