

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC INVESTIGATION OF THE)	CASE NO.
SERVICE, RATES AND FACILITIES OF)	2021-00370
KENTUCKY POWER COMPANY)	

NOTICE OF FILING

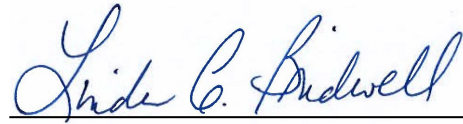
Notice is given to all parties that the following materials have been filed into the record of this proceeding:

- The digital video recording of the evidentiary hearing conducted on October 5, 2021 in this proceeding;
- Certification of the accuracy and correctness of the digital video recording;
- All exhibits introduced at the evidentiary hearing conducted on October 5, 2021 in this proceeding;
- A written log listing, inter alia, the date and time of where each witness' testimony begins and ends on the digital video recording of the evidentiary hearing conducted on October 5, 2021.

A copy of this Notice, the certification of the digital video record, and hearing log have been served upon all persons listed at the end of this Notice. Parties desiring to view the digital video recording of the hearing may do so at <https://youtu.be/Bao268nSIMU>.

Parties wishing an annotated digital video recording may submit a written request by electronic mail to pscfilings@ky.gov. A minimal fee will be assessed for a copy of this recording.

Done at Frankfort, Kentucky, this 21st day of October 2021.

A handwritten signature in blue ink that reads "Linda C. Bridwell". The signature is written in a cursive style with a horizontal line underneath it.

Linda C. Bridwell
Executive Director
Public Service Commission of Kentucky

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CERTIFICATION

I, Candace H. Sacre, hereby certify that:

1. The attached flash drive contains a digital recording of the Formal Hearing conducted in the above-styled proceeding on October 5, 2021. The Formal Hearing Log, Exhibits, and Exhibit List are included with the recording on October 5, 2021;
2. I am responsible for the preparation of the digital recording;
3. The digital recording accurately and correctly depicts the Formal Hearing of October 5, 2021; and
4. The Formal Hearing Log attached to this Certificate accurately and correctly states the events that occurred at the Formal Hearing of October 5, 2021, and the time at which each occurred.

Signed this 15th day of October, 2021.



Candace H. Sacre
Administrative Specialist III



Stephanie Schweighardt
Notary Public State at Large
Commission Expires: January 14, 2023
ID# 614400



Date:	Type:	Location:	Department:
10/5/2021	Public Hearing\Public Comments	Hearing Room 1	Hearing Room 1 (HR 1)

Witness: Kamran Ali; Amanda Conner; Tim Kerns; Brett Mattison; Gary Spitznogle; Alex Vaughan
 Judge: Marianne Butler; Kent Chandler; Amy Cabbage
 Clerk: Candace Sacre

Event Time	Log Event	
9:05:48 AM	Session Started	
9:05:53 AM	Camera Lock Deactivated	
9:06:21 AM	Chairman Chandler Note: Sacre, Candace	On the record in Case No. 2021-00370, Electronic Investigation of the Service, Rates and Facilities of Kentucky Power Company.
9:06:33 AM	Chairman Chandler Note: Sacre, Candace	My name is Kent Chandler. I am Chairman of the Kentucky Public Service Commission, and I will be presiding today. Joining me virtually are Vice Chairman Amy Cabbage and Commissioner Marianne Butler.
9:06:43 AM	Chairman Chandler Note: Sacre, Candace	COVID and videoconferencing recommendations. (Click on link for further comments.)
9:08:11 AM	Chairman Chandler Note: Sacre, Candace	The hearing today is for the purpose of taking evidence on the AEP strategic review of Kentucky assets; ownership of Mitchell Power Plant, including whether Kentucky Power has considered selling its interest to Wheeling Power Company and finding other capacity; the need for a CPCN even if West Virginia PSC approves Wheeling's petition, transmission planning, and operation; and any other related matters.
9:08:37 AM	Chairman Chandler Note: Sacre, Candace	Appearance of counsel. (Click on link for further comments.)
9:09:03 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Mark Overstreet, appearing with me is Katie Glass, persons available today are Brett Mattison, Gary Spitznogle, Tim Kerns, Amanda Conner, Kamran Ali, and Alex Vaughan.
9:10:13 AM	Asst Atty General West Note: Sacre, Candace	Mike West and Larry Cook, no witnesses.
9:10:23 AM	Atty Kurtz KIUC Note: Sacre, Candace	Mike Kurtz and Jody Kyler Cohn, no witnesses.
9:10:31 AM	Atty Miller Sierra Club Note: Sacre, Candace	Matthew Miller and Joe Childers, no witnesses.
9:10:44 AM	Atty Grundmann Walmart Note: Sacre, Candace	Carrie Grundmann, on behalf of Walmart, no witnesses.
9:10:55 AM	Gen Counsel Vinsel PSC Note: Sacre, Candace	Nancy Vinsel and JEB Pinney
9:11:01 AM	Chairman Chandler Note: Sacre, Candace	Questions, confidentiality agreements. (Click on link for further comments.)
9:11:31 AM	Chairman Chandler Note: Sacre, Candace	Public notice. (Click on link for further comments.)

9:11:42 AM	Chairman Chandler Note: Sacre, Candace	Outstanding motions. (Click on link for further comments.)
9:11:58 AM	Chairman Chandler Note: Sacre, Candace	Public comments. (Click on link for further comments.)
9:12:21 AM	Chairman Chandler Note: Sacre, Candace	Procedural process. (Click on link for further comments.)
9:13:13 AM	Chairman Chandler Note: Sacre, Candace	Anything take care of prior to taking evidence? (Click on link for further comments.)
9:13:38 AM	Chairman Chandler Note: Sacre, Candace	First witness?
9:13:41 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Brett Mattison.
9:13:45 AM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
9:14:06 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Examination. Name and address?
9:14:18 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Direct Examination. Position with Kentucky Power?
9:14:31 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Profile direct testimony?
9:14:38 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Corrections or modifications?
9:14:47 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Asked same questions, answers be same?
9:15:00 AM	Chairman Chandler Note: Sacre, Candace	Questions?
9:15:06 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Cross Examination. Turn to testimony, page 10?
9:15:23 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Line 11, what happen Wheeling Power decides pay for investments in ELG at Mitchell though Kentucky Power not, ramification Wheeling sole responsibility capital investments supporting ELG compliance?
9:15:56 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Page 11, line 2, cost of non-ELG capital investments before 2028 and used after 2028 be apportioned between companies, what mean by that?
9:17:27 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	When utility has known retirement date, utility taper down capital investments?
9:18:10 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	If Wheeling continue operate beyond 2028, no winding down, capital investments made keep plant operational beyond 2028?
9:18:51 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Agree after 2028, what about period before 2028?
9:19:58 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Questions about testimony of Becker.
9:20:10 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Becker not witness. (Click on link for further comments.)
9:21:08 AM	Atty Kurtz KIUC Note: Sacre, Candace	Like to ask Mattison questions about testimony, to extent knows can answer. (Click on link for further comments.)

9:21:57 AM	Chairman Chandler Note: Sacre, Candace	Will let questions go, but fair point. (Click on link for further comments.)
9:22:43 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Future hearings, Becker could be made available.
9:23:11 AM	Atty Kurtz KIUC Note: Sacre, Candace	Have marked as KIUC Exhibit 1.
9:23:18 AM	Chairman Chandler Note: Sacre, Candace	So marked.
9:23:29 AM	KIUC EXHIBIT 1 Note: Sacre, Candace Note: Sacre, Candace	ATTY KURTZ - WITNESS MATTISON DIRECT TESTIMONY OF BECKER CASE NO. 2021-00004
9:23:35 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Continuing objection to Mattison cross examined on it.
9:23:43 AM	Chairman Chandler Note: Sacre, Candace	Be fine, noted.
9:23:48 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Have testimony in front of you?
9:25:07 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Page 7, line 7, CCR compliance costs, reading (click on link for further comments), agree with Becker analysis?
9:26:32 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Page 13, line 1, assumptions future capital costs Mitchell, reading (click on link for further comments), understanding what happen if plant retire in 2028?
9:28:18 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Agree Kentucky Power consumers not pay for incremental capital investments in plant or at landfill because Wheeling wants operate beyond 2028?
9:29:06 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Exhibit MAB-1, page 4 of 10, base company with carbon commodity pricing, reading (click on link for further comments), two other scenarios, look at Becker testimony back in CPCN case?
9:31:00 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Column 4, Mitchell Fixed O&M and Ongoing Capital Recovery, negative numbers indicating savings, Column 9, Grand Total Net Utility Costs, year-by-year savings, agree?
9:32:04 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Column 10, cumulative difference, reaching \$30,671,000 in 2027, see that?
9:32:26 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Indicate would be \$30,671,000 savings to Kentucky Power retiring plant early versus making capital investments operate beyond 2028?
9:32:55 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Imperfect analogy, (click on link for further comments), not spend as much capital keeping for ten years, analogy on point?
9:33:52 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	How Commission monitoring/regulating but-for analysis?
9:34:36 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Not spending capital on Mitchell because glide path towards closure 2028, net book cost depreciated each year, correct?
9:35:04 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Annual depreciation expense on Mitchell plant?

9:35:14 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Last rate case order, ordered Kentucky Power file rate case mid-2022 new rates effective 1-1-23, recall that?
9:35:33 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	'23 be effective '24?
9:35:44 AM	Chairman Chandler Note: Sacre, Candace	Commission ordered company file rate case on a date certain for a rate effective date certain? (Click on link for further comments.)
9:36:22 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Next rate case filing, part Mitchell fixed costs recovered in environmental surcharge, scrubber?
9:36:40 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Part next rate case, Kentucky Power willing to implement a Mitchell cost tracker?
9:37:26 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Object. (Click on link for further comments.)
9:38:35 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Instead of recovering balance Mitchell fixed costs in base rates, company consider tracker recovered fixed costs outside base rates like for transmission?
9:39:16 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Declaratory judgment action, familiar?
9:39:28 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Asking Commission declare CPCN from this Commission not required, general understanding of it?
9:40:26 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Assume CPCN from Kentucky not required, Wheeling Power need Kentucky Power permission to do ELG?
9:41:15 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Wheeling need your permission to build ELG on your half of Mitchell?
9:41:46 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Assuming AEP correct, CPCN not required, but assume Wheeling needs permission do ELG, Commission has full jurisdiction over rates of Kentucky Power and decisions that affect rates?
9:42:12 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Object. (Click on link for further comments.)
9:42:15 AM	Chairman Chandler Note: Sacre, Candace	Tend to agree.
9:42:22 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Does Wheeling need Kentucky Power permission build ELG?
9:43:04 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Or capital expenditures have not been made but for decision operate plant past 2028?
9:43:16 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Say that earlier, if capital investment made benefit Wheeling, Kentucky consumers not have to pay?
9:44:00 AM	Atty Kurtz KIUC - witness Mattison Note: Sacre, Candace	Modifications to Mitchell operating agreement, discuss decommissioning expenditures and how paid?
9:44:13 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Designated Kerns address. (Click on link for further comments.)
9:45:10 AM	Chairman Chandler Note: Sacre, Candace	Questions?

9:45:38 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Cross Examination. Possible future capital expenses may come up, need Commission approval of those costs over and above what approved?
9:46:35 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Object. (Click on link for further comments.)
9:46:48 AM	Chairman Chandler Note: Sacre, Candace	Ask question again without restating testimony.
9:46:56 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Agree capital expenses may arise prior to 2028 not part company outlined but may arise KPC need Commission approval?
9:47:28 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Object. (Click on link for further comments.)
9:47:33 AM	Chairman Chandler Note: Sacre, Candace	Hear objection? (Click on link for further comments.)
9:47:39 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Company intend on bringing expenses to Commission attention for authorization?
9:48:01 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Broad question, objection.
9:48:07 AM	Chairman Chandler Note: Sacre, Candace	If Mattison thinks too remote, his ability say so.
9:49:43 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Commission have ability review substantial additional capital expenses other than what approved, leave it at that, but significant qualifier, if major capital expenses that arise and require investment benefit over life of plant past 2028, would Kentucky Power bring those investments to Commission attention so review and decide how much costs recover?
9:51:34 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Same objection, to extent witness can answer.
9:51:45 AM	Chairman Chandler Note: Sacre, Candace	Sustain, with specificity.
9:51:59 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Will Kentucky Power seek approval from Commission for major capital expenses at Mitchell next seven years not contemplated in CPCN Order?
9:52:33 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Same objection. (Click on link for further comments.)
9:52:48 AM	Chairman Chandler Note: Sacre, Candace	Respond? (Click on link for further comments.)
9:53:11 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Major capital expenses that come up not already approved, Kentucky Power bring those to Commission?
9:53:26 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Objection. (Click on link for further comments.)
9:53:41 AM	Chairman Chandler Note: Sacre, Candace	Appreciate objection. (Click on link for further comments.)
9:56:11 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	This Commission would have opportunity review what costs are and make sure fairly apportioned between companies, does not say explicitly, fair to say if arrangement reached would Kentucky Power present to Commission such major costs?
9:57:31 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Objection. (Click on link for further comments.)

9:58:16 AM	Atty Miller Sierra Club Note: Sacre, Candace	Not mean insist necessarily be prospective and not retrospective in a rate case, move on, (click on link for further comments).
9:59:14 AM	Atty Miller Sierra Club - witness Mattison Note: Sacre, Candace	Page 11, testimony, possibilities Mitchell flagged, sales to Wheeling, sale to third party, any new contract that Kentucky Power enters for purchase of power in the future, whatever term may run out, if arrangement that AEP, Wheeling, Kentucky Power power purchase agreement from Mitchell plant subject to review?
10:01:01 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Object again.
10:01:03 AM	Chairman Chandler Note: Sacre, Candace	Sustained. (Click on link for further comments.)
10:01:39 AM	Chairman Chandler Note: Sacre, Candace	Questions?
10:01:46 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	Cross Examination. Discuss impact of strategic review generation of employee transfers, percentage of employees requested transfers?
10:03:31 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	If Mitchell operating agreement modified, what regulatory approval required?
10:03:55 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	Also file with West Virginia Commission?
10:04:03 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	With FERC?
10:04:14 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	Kurtz asking expenses incurred prior to 2028, talked about benefit to Kentucky Power customers, define what benefit is that be benchmark?
10:05:52 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	Conflict depreciation rates Mitchell, authorized depreciation rates Mitchell determined by this Commission but also West Virginia Commission?
10:06:14 AM	General Counsel Vinsel PSC - witness Mattison Note: Sacre, Candace	If difference, how allocated?
10:06:51 AM	Chairman Chandler Note: Sacre, Candace	Questions?
10:06:57 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	Examination. Operating agreement say Kentucky Power operator of Mitchell Plant?
10:07:32 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	All permits in Kentucky Power name?
10:07:42 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	Mitchell applies for permits, not in name of operator?
10:08:05 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	As far as application for ELG, Kentucky Power on permit?
10:08:26 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	Discussed Kentucky Power and Wheeling changes to operating agreement, different decisions, progress on what proposed or awaiting outcome of hearings?
10:09:27 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	What unknowns preventing moving forward right now?
10:10:15 AM	Vice Chairman Cabbage - witness Mattison Note: Sacre, Candace	Unknown in West Virginia hands?

10:10:42 AM Vice Chairman Cabbage - witness Mattison
Note: Sacre, Candace Transcripts West Virginia, possibility approve ELG but only on one unit?

10:11:17 AM Vice Chairman Cabbage - witness Mattison
Note: Sacre, Candace If decision by Oct 13 and West Virginia approve ELG move forward sole expense West Virginia ratepayers, believe quickly get amendments made operating agreement and filed with FERC so ELG proceed?

10:12:01 AM Vice Chairman Cabbage - witness Mattison
Note: Sacre, Candace Familiar with application for declaratory order filed?

10:12:16 AM Vice Chairman Cabbage - witness Mattison
Note: Sacre, Candace Statement page 2, reading (click on link for further comments), not understand relevance of June 2023, explain?

10:13:33 AM Chairman Chandler
Note: Sacre, Candace Questions?

10:13:48 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Examination. Wheeling Power already received CPCNs for CCR and ELG?

10:14:01 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Current proceeding in front of West Virginia with Wheeling related to equivalent environmental compliance plan, cost recovery portion, your understanding?

10:14:29 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Wheeling received CPCNs for CCR and ELG?

10:14:48 AM Atty Overstreet Kentucky Power
Note: Sacre, Candace From West Virginia Commission?

10:14:59 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Assume law similar, found satisfied standard, here this Commission found only demanded compliance with CCR rule, company failed to meet burden of proof for ELG compliance, your memory?

10:15:53 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Does Kentucky Power have position whether Wheeling Power move forward with building or complying with CCR and ELG the same as if this Commission approved proposed compliance plan?

10:16:55 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Important distinction, retirement date, application company testimony for ELG either compliant by certain date, if choose become ELG compliant by date certain, if not compliant continue operate plant under 2028?

10:17:51 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Company position Wheeling move forward with compliance for Mitchell plant past 2028 date?

10:18:18 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Discussion using Dec 31 2028 date as end of when Kentucky Power involved with Mitchell plant?

10:19:09 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace One thing mentioned, page 11, testimony, reading (click on link for further comments), see that?

10:19:36 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Understanding of fair apportionment of retirement/removal Mitchell, aware fair apportionment when Kentucky Power purchased 50 percent interest in Mitchell from AEP affiliate?

10:20:45 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace If plant continue operate past 2028, purchase Mitchell at net book value?

10:21:07 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace If Mitchell not retired 2028, why be fair apportionment of retirement and removal costs?

10:21:56 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace This portion not related to should Mitchell continue to be owned Wheeling and Kentucky Power, line 7 purchase price should sell Mitchell to Wheeling, if this is sold, line 7, page 11, discussing purchase price if Kentucky Power sells Mitchell, why purchase price include apportionment costs of retirement and removal of plant?

10:23:29 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Going back, purchase half interest in Mitchell net book value, asking envisioning something different when selling Mitchell than net book value?

10:25:05 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Mitchell sold to Kentucky Power for net book value?

10:25:31 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Most favored nation clause, net book value ordinarily fair characterization remaining value of asset when sold?

10:25:57 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Part of consideration Wheeling Power operator of Mitchell?

10:26:07 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Not asking for legal opinion, fix a lot of problems if West Virginia moves forward with allowing Wheeling recover costs solely ELG and Wheeling move forward with ELG and CCR compliance, making them operator fix problems operating agreement?

10:27:27 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Kentucky Power out of Rockport UPA December next year?

10:27:42 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Kentucky Power plan out of Mitchell plant end of 2028?

10:27:59 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Kentucky Power current estimated retirement date Big Sandy 1 2032?

10:28:19 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Big Sandy 1 converted gas-fired power plant?

10:28:30 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Still operates on boiler system?

10:28:38 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Boilers expensive?

10:29:00 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Replacing boiler significant capital expense?

10:29:19 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Boiler break replace boiler itself wouldn't be cheap?

10:29:52 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Big capital expense part of power plants, anticipated retirement Big Sandy 1 2032, cost of replacing breaks prior to retirement date, common sense about retire and replacement cost in tens of million, go ahead and retire early, perspective how you think about that?

10:32:03 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Know reason Kentucky Power estimates current retirement date for Big Sandy 1 is 2032, cost of keeping open exceed cost of replacement generation?

10:32:43 AM Chairman Chandler - witness Mattison
Note: Sacre, Candace Affidavit end of petition for declaratory order, aware because affiant provided factual basis for application?

10:33:17 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Application done at your directive?
10:34:29 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Summary observation of request in application, specifically request on page 26, reading (click on link for further comments), what impetus for need to request application for declaratory order?
10:35:49 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Unaware any order indicate Wheeling Power must receive CPCN for anything from this Commission, what concern company have felt needed clarification from this Commission whether Wheeling needed CPCN comply ELG rule, impetus/concern felt need to seek declaratory order?
10:37:42 AM	Chairman Chandler Note: Sacre, Candace	That satisfies my questions on that issue. (Click on link for further comments.)
10:37:56 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Point Commission to page 8 of Sept 15 Order where identifies need for CPCN even if West Virginia approves Wheeling petition.
10:38:50 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Regardless of officers of Kentucky Power, as COO, have profit and loss responsibilities for Kentucky Power?
10:39:35 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Do your own capital plan and investment plan and seek dollars from plan on annual biannual process from AEP?
10:40:23 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	CFO of AEP also CFO of Kentucky Power?
10:40:30 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Who is that?
10:40:34 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Fairly new?
10:40:57 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	S-L-O-A-T?
10:41:07 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	As CFO, work with you and create Kentucky Power plan, or done by you and your team?
10:41:47 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Walk me through timeline come up with plans, start year before?
10:43:21 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	When investment review committee meet?
10:43:33 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Start in spring, mean March April May, when thinking?
10:43:51 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Late summer, send along and have conversations with investment review committee, at AEP level?
10:44:06 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	When get indication capital be available subsequent calendar year?
10:44:27 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Had meeting and told what allocation of capital will be?
10:44:49 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	When get money, how amount allocated?
10:45:38 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Based off anticipated cash needs are?

10:45:55 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Capitalizing costs for book purposes, have to buy, depending on AEP get investment money, walk me through what giving you when and what based on?
10:47:24 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Make investment, recover on books, goes into service, providing service based off investment?
10:47:47 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Difference between distribution costs come from bottom up versus generation and transmission?
10:48:29 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Majority distribution function housed in Ashland and East Kentucky, more input on need from AEP SC, depend on transmission and generation groups for capital planning purposes?
10:49:44 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Purpose of question, not know what confusing, depend more on transmission/generation functions at AEP than do distribution functions, saying not necessarily know?
10:50:23 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Impression always company at least somewhat dependent on AEP certain functions, three primary functions transmission/generation/distribution, Kentucky Power more dependent on AEP SC groups transmission/generation than on AEP SC groups distribution creating annual capital plans?
10:51:23 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Relative to each other each of those three groups?
10:51:43 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Dependent on all three groups, dependent on any of those groups more than other groups?
10:52:20 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	How dependent for each of those functions? How much of total pie of input depending on AEP folks verse Kentucky Power people and depending on more for one of those functions than others?
10:53:58 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	If next year told not be able use AEP employees put together capital plan in spring 2022, one of three functions easier than others?
10:54:42 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Strategic review future of Kentucky Power as portion of AEP, how dependent on three primary functions for capital planning purposes Kentucky Power is on AEP SC relative each other?
10:55:29 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Informed by fact there is a strategic review?
10:55:48 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Distribution depend on AEP SC at all/significant amount doing capital plan?
10:56:06 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Depending on more than half of inputs or related to like DERs where depend on AEP SC?
10:56:34 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	What in place at Kentucky Power, 85 percent of inputs and folks working on distribution capital plan at Kentucky Power, remainder at affiliates, but depend exclusively on affiliates inputs and help on transmission and generation functions annual capital plan?
10:57:28 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Changed since got to Kentucky Power or always been case, during your time?

10:57:42 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Time frame gave come up with annual capital plan coincided public announcement of strategic review, at Kentucky Power and did same process last year?
10:58:13 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Any change last year and this year in terms of capital plan regarding distribution planning/investment as result of strategic review?
10:59:21 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	AEP Kentucky Transmission Company, aware of entity?
10:59:34 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Known as Transco?
10:59:47 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	AEP Kentucky Transmission Company, have about \$100 million in rate base, FERC Form 1, Case 2020-00062, remember that case?
11:00:56 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Order went out last year approved CPCN, company requested hearing CPCN Kentucky Transco build but Kentucky Power move forth building?
11:01:24 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Process on transmission side, made aware when receive information from AEP SC companies about transmission investment next year, informed whether AEP Kentucky Transmission Company performing investments identified need for Kentucky Power?
11:02:41 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	If rebuild Kentucky Power transmission, those improvements exclusively Kentucky Power investments and not include AEP Kentucky Transmission Company?
11:03:26 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	One done recent local meetings on and press releases on?
11:03:48 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	How did you make it happen, durable change or at your request, AEP Kentucky Transmission Company not involved moving forward facilities owned by Kentucky Power?
11:04:11 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	Your expectation durable outcome?
11:04:42 AM	Chairman Chandler - witness Mattison Note: Sacre, Candace	A change that predates strategic review?
11:05:04 AM	Chairman Chandler Note: Sacre, Candace	Short recess until 11:15.
11:05:43 AM	Session Paused	
11:05:49 AM	Session Resumed	
11:05:55 AM	Session Paused	
11:17:08 AM	Session Resumed	
11:17:11 AM	Chairman Chandler Note: Sacre, Candace	Back on record in 2021-00370.
11:17:17 AM	Chairman Chandler Note: Sacre, Candace	Redirect?
11:17:41 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Redirect Examination. Pages 10 and 11, prefiled testimony, page 10 line 11, reading (click on link for further comments), see that question?
11:18:33 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Six bullets describe types of provisions could be considered?
11:18:45 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Second bullet, page 11, purchase price?

11:19:01 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Read to yourself that bullet. True describing possible changes to Mitchell operating agreement?
11:19:48 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Not necessarily price at which asset might be sold?
11:20:04 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	No. 2, true any sale price of Mitchell to Wheeling depend on specifics of transaction?
11:20:22 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Amount need be negotiated?
11:20:30 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Required by law, brought to this Commission fairness of price?
11:20:44 AM	Atty Overstreet Kentucky Power - witness Mattison Note: Sacre, Candace	Net book value may or may not be that price?
11:21:00 AM	Chairman Chandler Note: Sacre, Candace	Step down, request stay. (Click on link for further comments.)
11:21:37 AM	Chairman Chandler Note: Sacre, Candace	Procedural discussions. (Click on link for further comments.)
11:22:31 AM	Chairman Chandler Note: Sacre, Candace	Next witness?
11:22:34 AM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Gary Spitznogle.
11:22:43 AM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
11:22:52 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Examination. Name and address?
11:23:02 AM	Atty Glass Kentucky Power - witness Spitznogle Note: Sacre, Candace	Direct Examination. Position and company work for?
11:23:17 AM	Atty Glass Kentucky Power - witness Spitznogle Note: Sacre, Candace	Made available by company to answer questions related to Mitchell environmental compliance plan Kentucky Power and Wheeling Power, other related matters directed by Commission Sept 27 2021 Order?
11:23:47 AM	Chairman Chandler Note: Sacre, Candace	Questions?
11:23:54 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	Cross Examination. Regulatory deadlines for ELG compliance?
11:24:50 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	Provide other key dates?
11:25:58 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	Requirement under West Virginia delegated program?
11:26:29 AM	Chairman Chandler Note: Sacre, Candace	Note when use "we" who referring to?
11:26:42 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	What construction items required achieve ELG compliance?
11:27:56 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	Modifications time consuming?
11:28:10 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	Walk through timeline for construction items, specifically lay out end of 2028 deadline?
11:29:15 AM	Asst Atty General West - witness Spitznogle Note: Sacre, Candace	All projects fully completed prior to 2028?
11:29:35 AM	Chairman Chandler Note: Sacre, Candace	Questions?

11:29:43 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Cross Examination. Decommissioning, tearing down stacks and boilers same process if retired in 2028 and its 2040, correct?

11:30:19 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Plant retired in 2028, decommissioning costs wet ash pond, landfills, all environmental, versus goes to 2040 environmental decommissioning projects at that time?

11:30:58 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace What projects be from environmental perspective?

11:31:07 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Projects be from environmental perspective once plant retired?

11:31:27 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Environmental decommissioning same either way, different projects under 2028 and 2040?

11:32:57 AM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace What about 2040 scenario where do ELG?

11:33:48 AM Chairman Chandler
Note: Sacre, Candace Questions?

11:33:55 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace Cross Examination. As to dates ELG compliance, if Kentucky Power or Wheeling file notice of NOPT, only Wheeling needs to file whether plant retire 2028 versus invest in project?

11:34:47 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace That's with West Virginia DEP?

11:34:54 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace If Kentucky Power file on 13th that Mitchell retired end 2028, remove cloud of uncertainty whether plant continue operate coal-fired power plant until 2028?

11:35:45 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace If Kentucky Power do that, not be concern whether plant continue operate coal fired past 2023 or 2025?

11:36:11 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace Application for declaratory relief, familiar?

11:36:28 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace Not advise?

11:36:38 AM Atty Miller Sierra Club - witness Spitznogle
Note: Sacre, Candace ELG compliance details, not PSC approvals?

11:37:02 AM Chairman Chandler
Note: Sacre, Candace Questions?

11:37:14 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace Cross Examination. Two main projects ELG 2023 and 2025 completion dates?

11:37:29 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace 2023 transition from wet ash to dry ash handling system?

11:37:42 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace Break-ground date for that?

11:37:56 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace Currently not underway?

11:38:08 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace Time line takes to complete?

11:38:34 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace Uncertainty of construction projects?

11:38:49 AM Atty Grundmann Walmart - witness Spitznogle
Note: Sacre, Candace October 13 deadline West Virginia DEP, two options, file NOPT close plant end of 2028?

11:39:06 AM	Atty Grundmann Walmart - witness Spitznogle Note: Sacre, Candace	Other option, go through with ELG upgrades?
11:39:42 AM	Atty Grundmann Walmart - witness Spitznogle Note: Sacre, Candace	In event file NOPT, decision set in stone?
11:40:04 AM	Atty Grundmann Walmart - witness Spitznogle Note: Sacre, Candace	What mean switch from one NOPT to another NOPT?
11:42:00 AM	Atty Grundmann Walmart - witness Spitznogle Note: Sacre, Candace	Who answer what plan is for meeting Kentucky Power capacity obligations if NOPT filed?
11:42:21 AM	Chairman Chandler Note: Sacre, Candace	Questions?
11:42:33 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Examination. Who permit holder for environmental permits for Mitchell?
11:42:54 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	ELG compliance, covered by requested NPDES modification, that permit held by Kentucky Power?
11:43:12 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Stated June 30 2023 deadline compliance bottom ash transport water portion of rule?
11:43:40 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Compliance date, Kentucky Power proposed be in draft or in regulation?
11:44:20 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	State of uncertainty West Virginia proceedings, date be changed before final permit issued?
11:45:55 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Kentucky Power prohibited from seeking additional extensions up through 2025 date?
11:46:20 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Draft permits and modification requests, 6-30-23, Kentucky Power prohibited asking another extension through Dec 31 2025 date?
11:47:24 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	West Virginia DEP cooperative through process?
11:47:53 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Conflicting orders ELG compliance, notice given to either DEP or EPA permit holder change may need to be made?
11:48:34 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Would expect get final permit, then ask for change identity of holder?
11:48:43 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Expect to difficult?
11:48:56 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	True with West Virginia DEP and USEPA?
11:49:14 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	What happens get to June 30 2023 work not done, not fully compliant with deadline?
11:50:24 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Would be fairly remote likelihood plant abruptly shut down in 2023?
11:51:01 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Under what circumstances AEP not make progress?
11:51:44 AM	Vice Chairman Cabbage - witness Spitznogle Note: Sacre, Candace	Not contemplate circumstance where make no progress?
11:51:48 AM	Chairman Chandler Note: Sacre, Candace	Questions?

11:51:54 AM	Commissioner Butler - witness Spitznogle Note: Sacre, Candace	Examination. Modification of fuel, plans to convert plant?
11:52:37 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Examination. How long doing environmental compliance/remediation, how long in group?
11:53:22 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Aware AEP subsidiaries sold number of power plants similar to Mitchell?
11:53:47 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Plants sold to non-affiliates, AEP have environmental obligations after sale of assets?
11:54:37 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Called on to identify post-transfer environmental costs that Kentucky Power has paid offset to purchase price, called to do that?
11:55:32 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Ash ponds fairly straight forward or complicated by any other entities used/continue to use ponds?
11:55:56 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Exclusive to bottom ash ponds, other ash ponds used by third parties unaffiliated with power plant?
11:56:27 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Heard of Southwestern Electric?
11:56:37 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Had occasion work on behalf of Southwestern Electric?
11:56:51 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Called SWEPCO?
11:57:01 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	SWEPCO an AEP affiliate?
11:57:07 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	ELG on books, published in Federal Register since 2015?
11:57:22 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	SWEPCO named plaintiff lawsuit challenging ELG compliance?
11:57:41 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Aware SWEPCO/other affiliate sued to challenge initial ELG regulation following publication?
11:57:58 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Your understanding that ELG published in Federal Register 2015?
11:58:09 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Amended since then?
11:58:14 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Published Nov 3 2015, LG&E filed environmental compliance plan early Mar 31 2020, if plan put in effect 2015 and have dates here June 30 2023 handling bottom ash through dry process, why not until earlier this year Kentucky Power filed compliance plan comply with ELG?
11:59:49 AM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Finalized, published in Aug 2020?
12:00:03 PM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	When company on notice proposed ELG changes?
12:00:20 PM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Specific to major capital improvements comply ELG, anything significantly differed proposed rule and final rule?
12:00:49 PM	Chairman Chandler - witness Spitznogle Note: Sacre, Candace	Material to point resulted in millions of dollars of changes draft rule versus published rule?

12:02:20 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace Part of proceedings in other jurisdictions?

12:02:31 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace Application before West Virginia commission filed before this Commission?

12:02:41 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace Month or two?

12:02:50 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace In what other states participated in ELG compliance dockets?

12:03:09 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace Know when filed plan?

12:03:23 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace When Indiana and Michigan Power filed their plans?

12:03:51 PM Chairman Chandler - witness Spitznogle
Note: Sacre, Candace Not provide as much time to comply?

12:04:12 PM Chairman Chandler
Note: Sacre, Candace Redirect?

12:04:20 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace Redirect Examination. 2015 ELG rule and 2020 final rule for ELG, true that Oct 13 2021 compliance date was new in fall 2020 rule?

12:05:11 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace NPDES permits and if company needed new or modify, even possible modify or get new permit before 2021 date?

12:05:51 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace EPA has veto power over permit changes?

12:05:59 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace Impractical to modify or get new permit?

12:06:18 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace Options of filing NOPT or withdrawing, path possible NOPT withdrawn Kentucky Power indicate not move forward with ELG and only CCR improvements and withdrew NOPT, possibility of VIP option?

12:06:57 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace Mentioned VIP option entail unproven technology, explain what unproven technology is and risks?

12:09:05 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace VIP option require additional revelatory approvals?

12:11:01 PM Atty Glass Kentucky Power - witness Spitznogle
Note: Sacre, Candace Project schedule for ELG projects, true actual project schedule found in direct testimony Brian Sherrick CPCN case?

12:11:43 PM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Recross Examination. If West Virginia says no to ELG, wet ash pond have to be decommissioned end of 2028?

12:12:25 PM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Assuming Kentucky Power has share, on hook for closure of wet ash pond sometime after 2028?

12:12:58 PM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace How much would closure of pond cost in 2028?

12:13:18 PM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace Whose testimony?

12:13:22 PM Atty Kurtz KIUC - witness Spitznogle
Note: Sacre, Candace If West Virginia says yes to ELG, pay for all, would encompass closing wet ash pond and converting to dry, paying 100 percent of it?

12:14:07 PM	Atty Kurtz KIUC - witness Spitznogle Note: Sacre, Candace	Assume West Virginia goes forward ELG, confer benefit on Kentucky consumers?
12:14:32 PM	Atty Kurtz KIUC - witness Spitznogle Note: Sacre, Candace	If West Virginia closes wet ash pond or converts to dry, then wet ash pond costs of retirement be less because already converted to dry?
12:16:06 PM	Atty Kurtz KIUC - witness Spitznogle Note: Sacre, Candace	Any benefit to Kentucky in terms of ash pond closure cost if West Virginia goes ahead with ELG?
12:16:37 PM	Chairman Chandler Note: Sacre, Candace	Questions?
12:16:43 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
12:16:55 PM	Chairman Chandler Note: Sacre, Candace	Procedural discussion. (Click on link for further comments.)
12:17:36 PM	Chairman Chandler Note: Sacre, Candace	Recess for lunch, back at 1:15.
12:17:49 PM	Session Paused	
1:20:03 PM	Session Resumed	
1:20:19 PM	Chairman Chandler Note: Sacre, Candace	Back on the record in Case No. 2021-00370.
1:20:23 PM	Chairman Chandler Note: Sacre, Candace	Procedural discussions. (Click on link for further comments.)
1:21:03 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
1:21:10 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Tim Kerns.
1:21:16 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
1:21:33 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Examination. Name and address?
1:21:48 PM	Atty Glass Kentucky Power - witness Kerns Note: Sacre, Candace	Direct Examination. Position and by whom employed?
1:22:04 PM	Atty Glass Kentucky Power - witness Kerns Note: Sacre, Candace	Correct made available answer questions any effect on generation planning or operations result of strategic review of Kentucky Power, actions taken Mitchell operating agreement result of strategic review and current operating agreement?
1:22:32 PM	Chairman Chandler Note: Sacre, Candace	Questions?
1:22:39 PM	Atty Kurtz KIUC - witness Kerns Note: Sacre, Candace	Cross Examination. General matter, benefit to Kentucky Power in terms of decommissioning costs if West Virginia go forward with ELG and pays for all ELG itself?
1:23:37 PM	Atty Kurtz KIUC - witness Kerns Note: Sacre, Candace	If West Virginia pays for all that, does that lower burden on Kentucky been CCR only, both states?
1:24:02 PM	Chairman Chandler Note: Sacre, Candace	Questions?
1:24:15 PM	Atty Grundmann Walmart - witness Kerns Note: Sacre, Candace	Cross Examination. Freeze on transfers, responsible?
1:24:43 PM	Atty Grundmann Walmart - witness Kerns Note: Sacre, Candace	When make that decision?

1:24:51 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace What precipitated that decision?

1:25:15 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace How many internal transfers seen or number at the time chose to implement decision?

1:25:47 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Assume transfer portal exists as ongoing basis within company?

1:26:13 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace For those 20-25 applied for other positions, over what time period?

1:26:55 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Idea percentage posted after strategic review?

1:27:08 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Postings increased as result of strategic review?

1:28:15 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace That suspension still in place?

1:28:17 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Time frame intend to resume internal transfers?

1:28:43 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace What current head count?

1:28:54 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Told me at time implemented freeze June 1 head count 187?

1:29:03 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Lost 24 individuals?

1:29:07 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Not as result of transfers?

1:29:38 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Tell me breakdown resignation and retirement?

1:29:41 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace Of 24, 19 been resignations/retirements?

1:29:54 PM Atty Grundmann Walmart - witness Kerns
Note: Sacre, Candace 19 in a four-month period unusual?

1:30:16 PM Chairman Chandler
Note: Sacre, Candace Questions?

1:30:29 PM General Counsel Vinsel PSC - witness Kerns
Note: Sacre, Candace Cross Examination. What impact on ability to provide reliable service?

1:31:20 PM General Counsel Vinsel PSC - witness Kerns
Note: Sacre, Candace Best estimate of increase in overtime costs?

1:31:50 PM Chairman Chandler
Note: Sacre, Candace Questions?

1:31:56 PM Vice Chairman Cabbage - witness Kerns
Note: Sacre, Candace Examination. Changes coming down the pipe, two decisions, operating committee currently?

1:33:01 PM Vice Chairman Cabbage - witness Kerns
Note: Sacre, Candace Operating agreement, plant upgrades and environmental upgrades submitted to operating committee, happening?

1:33:22 PM Vice Chairman Cabbage - witness Kerns
Note: Sacre, Candace Did ELG upgrade come before operating committee?

1:33:36 PM Vice Chairman Cabbage - witness Kerns
Note: Sacre, Candace Mean, generally, not formal meeting, designated members, unanimously agree go forward preparations ELG upgrades, be fair?

1:34:32 PM Vice Chairman Cabbage - witness Kerns
Note: Sacre, Candace Operating committee not officially blessed moving forward with ELG upgrades?

1:34:55 PM	Vice Chairman Cabbage - witness Kerns Note: Sacre, Candace	Presume ELG not approved and West Virginia approve and move forward, see a path forward for representative of operating committee to then approve ELG upgrade?
1:36:24 PM	Vice Chairman Cabbage - witness Kerns Note: Sacre, Candace	Expressed concern need for Wheeling to have CPCN from Kentucky if goes forward with ELG upgrade, fair statement?
1:36:51 PM	Vice Chairman Cabbage - witness Kerns Note: Sacre, Candace	Do you see any barriers to amending operating agreement to make Wheeling operator of Mitchell?
1:37:20 PM	Vice Chairman Cabbage - witness Kerns Note: Sacre, Candace	Workers at Mitchell, Kentucky Power employees because operator but if operator changed become employees of new operator?
1:37:45 PM	Vice Chairman Cabbage - witness Kerns Note: Sacre, Candace	Not talking about having to change day-to-day operations, changes in name only, as far as operations?
1:38:04 PM	Chairman Chandler Note: Sacre, Candace	Questions?
1:38:09 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Examination. Who do you work for?
1:38:18 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	AEP SC is agent in Mitchell plant operating agreement?
1:38:20 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	AEP SC, right?
1:38:38 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Your position, straddling line appearing for Kentucky Power and work for agent in operating agreement?
1:39:28 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Operator of Mitchell, under agreement currently Kentucky Power?
1:39:37 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Copy of agreement with you?
1:39:42 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Page 6, Article III, replacements, additions, retirements, agree this section deals with replacements additions retirements of capitalizable facilities?
1:40:26 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Distinction between certain operational decisions around fuel where sections talk about decision surrounding investments in fuel as agent and decisions by operating committee, who makes decisions around operating expenses and capitalizable items?
1:41:19 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Agreement discusses operating committee?
1:41:23 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Who committee made of?
1:41:37 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	What does operating committee do?
1:41:56 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Article 5, investment and fuel, see that?
1:42:06 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Discusses, part of 5.1, reading (click on link for further comments), subject to approval of operating committee, Article 6.1, reading (click on link for further comments), Article 7, operating committee/operations, what responsibilities/obligations/rights operating committee operation of Mitchell, correct?

1:43:16 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Sections 3.1 and 3.2, agree, section addresses replacements additions retirements capitalizable facilities, does not reference operating committee?
1:43:41 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Does it reference Wheeling Power in 3.1?
1:43:52 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Reference agent in 3.1?
1:43:57 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Reference entity other than Kentucky Power?
1:44:03 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Section 3.2 references only Wheeling Power and Kentucky Power?
1:44:10 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	And not operating committee, does not mention operating committee?
1:44:26 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Does not reference agent?
1:44:31 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Section 3.1, reading, (click on link for further comments), see that?
1:44:54 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Agree that what says?
1:44:59 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Section 3.2, reading, (click on link for further comments), see that?
1:45:25 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	This agreement filed with FERC?
1:45:35 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Accountant by any chance?
1:45:42 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Deal often with accountants?
1:45:57 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Enough experience appreciate difference capitalizable cost and expense?
1:46:07 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Expense is realized in year costed and capitalizable amount is recovered/expensed and realized over a number of years?
1:46:32 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Plant property equipment capitalizable facilities with exclusion of land?
1:47:13 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Know whether Kentucky Power and Wheeling have discussed amending this section?
1:47:27 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Understanding that Kentucky Power actually makes additions replacements or retirements of capitalizable facilities associated Mitchell?
1:47:59 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Any provision allow Wheeling Power make additions replacements or retirements capitalized facilities associated with Mitchell?
1:49:21 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Section 3, discussed in 7.9, annual budgeting process, explain what annual budgeting process looks like under agreement?
1:49:53 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Clarify who "we" is?
1:51:15 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	2021 annual budget include CCR and ELG compliance costs?

1:51:27 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Approved by operating committee?
1:51:42 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Anything precludes two or more voting on budget that third does not approve?
1:52:14 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Understanding from agreement unless in annual budget or approved by operating committee, capital expenditures not made to Mitchell plant?
1:52:54 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Be capital expenditures not in line with approved budget?
1:53:09 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	How determined?
1:53:49 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Effectively amending budget?
1:53:57 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Amending budget when do that or operating committee making decision outside annual budget?
1:54:55 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Wheeling and Kentucky Power come up with budget, approve, capital expenditures general in nature or may be capital expenditure specific to one of two parties, agreement speaks to that, come up with budget, approved, sent up with AEP, sent back you only get 98 percent of that, go into operating year with budget, under Section 3.1 and 3.2, Kentucky Power empowered make decisions approved budget and carry out with regard to retirements and additions?
1:56:37 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Discussing transfer freeze from Mitchell plant?
1:56:53 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Part believe related to strategic review?
1:57:15 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Mentioned believe in part concern uncertainty around future of plant, correct?
1:58:18 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Aware that's case for workers at John Amos and Mountaineer plants?
1:58:41 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Freezes at those plants aware of?
1:58:48 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Would you be aware?
1:58:59 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Understanding face similar decisions?
1:59:18 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Here to only discuss Mitchell operating agreement?
1:59:51 PM	Chairman Chandler - witness Kerns Note: Sacre, Candace	Other than decision freeze transfer at Mitchell and Big Sandy, any other decision based strategic review?
2:00:17 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
2:00:23 PM	Atty Glass Kentucky Power - witness Kerns Note: Sacre, Candace	Redirect Examination. Operating agreement, Section 3.1, reading (click on link for further comments), correct?
2:01:05 PM	Atty Glass Kentucky Power - witness Kerns Note: Sacre, Candace	Section 7.2(a), reading (click on link for further comments), correct?

2:01:33 PM	Atty Glass Kentucky Power - witness Kerns Note: Sacre, Candace	Operating committee approve annual budget?
2:01:47 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
2:01:56 PM	Chairman Chandler Note: Sacre, Candace	Additional witnesses?
2:01:59 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Amanda Conner.
2:02:13 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
2:02:29 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Examination. Name and address?
2:02:44 PM	Atty Overstreet Kentucky Power - witness Conner Note: Sacre, Candace	Direct Examination. By whom employed?
2:02:51 PM	Atty Overstreet Kentucky Power - witness Conner Note: Sacre, Candace	In what position?
2:03:00 PM	Atty Overstreet Kentucky Power - witness Conner Note: Sacre, Candace	What does that entail?
2:03:34 PM	Atty Overstreet Kentucky Power - witness Conner Note: Sacre, Candace	Familiar with Kentucky Power notice of filing witness list?
2:03:56 PM	Atty Overstreet Kentucky Power - witness Conner Note: Sacre, Candace	Here to testify on issues described as pertains to you?
2:04:05 PM	Chairman Chandler Note: Sacre, Candace	Questions?
2:04:36 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Examination. Reviewed agreement filed in this case, AEP Rate Schedule 300, power coordination agreement, aware generally?
2:07:18 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Recently able review power coordination agreement?
2:07:31 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Available to you right now?
2:09:35 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	How familiar Kentucky Power and AEP SC, as Kentucky Power agent, their interaction with PJM?
2:10:07 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Someone else can speak more to creation and annual membership interaction FRR plan Kentucky Power and PJM?
2:10:33 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	FRR plan significant number of AEP operating companies participate jointly in FRR plan filed with PJM?
2:11:02 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Significant amount of that how interaction occurs and how plan created laid out in power coordination agreement?
2:11:22 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	FRR plan way in which entity become full member of PJM, turn over functional control of transmission system become full-fledged members, not participating annual base residual auction capacity market?
2:12:07 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	PJM members fall into two categories, participate in auctions and those satisfy capacity requirements through FRR?
2:12:40 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	One or other?

2:13:10 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Kentucky Power and other affiliates go in together for FRR plan?
2:13:36 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Aware what PJM said Kentucky Power obligations in terms of capacity verse what capacity currently has?
2:14:06 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Ask about other members power coordination agreement long, short, adequate on capacity, also questions for Vaughan?
2:14:27 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Aware RAA or PJM reliability assurance agreement?
2:14:53 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Aware of those attachments to PJM open access transmission tariff as related to AEP companies generally?
2:15:19 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Understanding primary interaction between Kentucky Power and PJM through AEP SC as agent?
2:15:36 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Relates not only RAA but also open access transmission tariffs?
2:15:54 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Aware of direct interaction Kentucky Power and PJM?
2:16:08 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Anyone works for you, with you, in your division who is employee Kentucky Power or works exclusively on behalf Kentucky Power?
2:16:32 PM	Chairman Chandler - witness Conner Note: Sacre, Candace	Generation hedges, off-system sales/purchases, any changes to PJM operating documents, if affect Kentucky Power, entity representing Kentucky Power is AEP SC employee?
2:17:20 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
2:17:27 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
2:17:44 PM	Chairman Chandler Note: Sacre, Candace	Recess until 2:30.
2:18:05 PM	Session Paused	
2:31:19 PM	Session Resumed	
2:31:42 PM	Chairman Chandler Note: Sacre, Candace	Back on the record in Case No. 2021-00370.
2:31:51 PM	Chairman Chandler Note: Sacre, Candace	Additional witnesses?
2:31:55 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Kamran Ali.
2:32:04 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
2:32:42 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Examination. Name and address?
2:33:01 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Direct Examination. By whom employed?
2:33:09 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Position with Service Corps?
2:33:21 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Here to answer questions on topics identified in Oct 1 Notice of Filing?
2:33:56 PM	Chairman Chandler Note: Sacre, Candace	Questions?

2:34:14 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Examination. How long employed with AEP?
2:34:25 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Worked primarily in transmission planning?
2:34:50 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Has Kentucky Power been member of PJM most if not all time at AEP?
2:35:18 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Coincident with that so have number of AEP operating companies?
2:35:42 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Presume certain transmission planning functions companies take be identical to those take if not part of PJM, likely actions have to partake that not necessarily if not part of PJM?
2:37:57 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Been watching hearing entirety of day?
2:38:05 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	See portion of hearing asking Mattison questions regarding level of input required from AEP SC organization budgeting and capital plans generation/transmission functions Kentucky Power?
2:38:32 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Anything that Mattison said around transmission function disagree with?
2:39:41 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Ask you the process going through identify needs and determine annual plan, identify inputs to Mattison in context of capital plan?
2:42:34 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Example, describe that as issue of line?
2:43:15 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Who is CMI measured by?
2:44:25 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Interplay between operating company and AEP SC, outage/number of outages over defined period, distribution system certain areas not being fed electricity from transmission system, log those and provide data on enterprise level?
2:45:59 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Operating company employees at transmission level or AEP SC employees at transmission level?
2:46:34 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Aware of 765 lines running through Kentucky?
2:46:42 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	People service one of those outages likely AEP SC transmission employees?
2:47:04 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Facilities owned by AEP Kentucky Transmission Company facilities, if outages, condition issues, Kentucky Power employees that go and service if outage or exclusively transmission field service employees?
2:48:49 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Distinction made in planning documents how response coordinated between transmission facilities owned by Kentucky Power and AEP Transmission Company?
2:49:41 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	No expansion of those owned by AEP Kentucky Transmission Company?

2:49:55 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Rate base not expected to increase or transfer assets to Kentucky Power?
2:50:29 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Under impression those facilities under different control?
2:50:47 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Under control of Mattison?
2:51:21 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Discussed example of group coming up with need based off transmission condition, solution to problem, present to Mattison, time horizon, in his hands where include in capital plan to provide to AEP?
2:52:16 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Everything up to that point, same whether Kentucky Power is/is not member of RTO?
2:53:11 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Based off condition, end of life criteria, distinction whether Kentucky Power part of RFO way identify needs?
2:53:49 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Needs not related to condition, based off identifiable standards, tests you conduct and tests and studies by PJM?
2:54:11 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Criteria set on company or enterprise wide basis or FERC approved methodology through RTO?
2:54:29 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Say standardized, may not receive copy each year, somewhere in cases have criteria, in discovery AEP given what enterprise-wide standards/criteria are?
2:54:58 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Reviewed annually as FERC-approved transmission planning process at PJM?
2:55:29 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Review each year voltage/thermal violations on system non-BES facilities?
2:55:59 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	What criteria or studies conducting, doing on own non-BES, PJM defers to studies, or criteria of own, what studies doing each year looking for violations of criteria/rules?
2:58:57 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	After Akins and Sloat approved and sent back Kentucky Power plan, this is your allocation, approved in total, need to follow through on needs AEP SC planning group said had, capital plan approved, what happens after that?
3:01:25 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	A need addressed through PJM study for BES facility, falls under immediate need, AEP Kentucky Power as owner is designated entity and proposes solution to PJM?
3:02:27 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	PJM conducts study, conducts RTEP, violations identified, need in your neck of woods, here are violations, your group working towards finding solution in concert with Mattison and capital plan?
3:03:26 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Interaction with relation to transmission planning your group and PJM, not necessarily a transmission person at Kentucky Power?

3:04:38 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Stakeholder meetings at PJM transmission planning?
3:04:57 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	R in RTEP stands for Regional, so really SRTEP, the Sub-RTEP?
3:05:19 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Silly to have Regional in there twice, so Sub-regional RTEP, majority of meetings regarding supplemental projects?
3:05:51 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Another meeting more about BES, what meeting is that?
3:06:07 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	T-Acts discuss proposed solutions identified problems needs for certain transmission projects for their particular system?
3:06:51 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Project in Kentucky a Kentucky Power facility, thermal violation X-number years out, AEP on line discuss solutions/alternatives, somebody there from your group, when Kentucky Power specific issue, somebody from Kentucky Power present on those?
3:08:56 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Aware of instances in which know Kentucky Power employee participate in those meetings?
3:09:19 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Aware generally of SET-14 standards?
3:09:31 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Those are sensitive facilities that fall under SET-14 standard?
3:09:56 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Anybody at Kentucky Power has experience identifies SET-14 facilities or depend on AEP to do that?
3:11:15 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Understanding Kentucky Power depending on AEP SC to make determination, conduct studies on its behalf?
3:11:48 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Also go with studies of transmission system condition Kentucky Power depends on AEP SC make those assessments?
3:12:55 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Also depend on AEP SC to conduct load flow analysis?
3:13:29 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Same for stability assessments and analyses?
3:13:51 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Had questions about AEP transmission agreement ask Vaughan?
3:14:21 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Identified needs on transmission and bring to Mattison as relate to Kentucky Power, if identified needs on AEP Kentucky Transmission Company system, who bring those to?
3:15:34 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Similar or different across AEP operating companies?
3:16:03 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Retirement existing generation necessitate additional transmission?
3:17:01 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	When operating companies in AEP system wanting to understand impact of retirement, find out what generation demand may be, studies you conduct, or depend on PJM conduct studies determine additional transmission necessary?
3:18:23 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Aware Kentucky Power or Wheeling Power ask you conduct studies for Mitchell power plant?

3:18:52 PM	Chairman Chandler - witness Ali Note: Sacre, Candace	Within last 12-16 months?
3:19:03 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
3:19:17 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Redirect Examination. Decision-making communications between your organization and Kentucky Power/Mattison and your organization and AEP Kentucky Transmission Company, remember?
3:19:55 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	In case of Kentucky Transco, dealt with Kentucky Transco management, remember that statement?
3:20:39 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Agree management of Kentucky Transco involves Toby Thomas and Akins?
3:21:21 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Discussed study performed last 12-16 months transmission planning and effect retirement Mitchell, remember?
3:21:46 PM	Atty Overstreet Kentucky Power - witness Ali Note: Sacre, Candace	Performed at request of counsel?
3:22:33 PM	Chairman Chandler Note: Sacre, Candace	Recess until 3:30.
3:23:06 PM	Session Paused	
3:32:18 PM	Session Resumed	
3:32:28 PM	Chairman Chandler Note: Sacre, Candace	Back on record in Case No. 2021-00370.
3:32:34 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
3:32:37 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Alex Vaughan.
3:32:42 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:32:57 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Examination. Name and address?
3:33:01 PM	Atty Overstreet Kentucky Power - witness Vaughan Note: Sacre, Candace	Direct Examination. By whom employed?
3:33:26 PM	Atty Overstreet Kentucky Power - witness Vaughan Note: Sacre, Candace	Position?
3:33:36 PM	Atty Overstreet Kentucky Power - witness Vaughan Note: Sacre, Candace	Familiar with subject matter offered for testimony as identified Notice of Filing?
3:33:59 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:34:02 PM	Atty Kurtz KICU - witness Vaughan Note: Sacre, Candace	Cross Examination. West Virginia forward with ELG and Kentucky CCR only, any benefits or cost savings to reduce demolition or decommissioning costs environmental costs or any benefits that might accrue to Kentucky?
3:34:56 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:35:17 PM	Gen Counsel Vinsel PSC - witness Vaughan Note: Sacre, Candace	Cross Examination. Depreciation rates at Mitchell, know if West Virginia Commission and Kentucky Commission approved same depreciation rate schedule for Mitchell?
3:35:44 PM	Gen Counsel Vinsel PSC - witness Vaughan Note: Sacre, Candace	How allocated?

3:36:36 PM Gen Counsel Vinsel PSC - witness Vaughan
Note: Sacre, Candace When say tracking different rates, allocation to each entity?

3:37:36 PM Gen Counsel Vinsel PSC - witness Vaughan
Note: Sacre, Candace Is reapportionment tied back to depreciation rates, basis of allocation?

3:37:59 PM Chairman Chandler
Note: Sacre, Candace Questions?

3:38:13 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Examination. Hear questions to Conner?

3:38:33 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Been part of or aware of AEP FRR plan as created any given year?

3:39:02 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Interact with Kentucky Power in current and previous jobs at AEP SC?

3:39:23 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Aware from interactions allocated costs planning any direct interaction Kentucky Power and PJM not necessarily through AEP SC as agent?

3:40:47 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Kentucky Power operates Mitchell plant?

3:41:14 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Kentucky Power takes dispatch direction directly from PJM or through AEP SC?

3:41:51 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace No distinction between that situation and Big Sandy 1?

3:42:06 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Aware AEP East Transmission operating agreement?

3:42:18 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Cost allocation perspective, PJM not direct charge Kentucky Power for transmission expenses, not send bill to Ashland?

3:42:33 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Send a bill to Ashland?

3:43:06 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace AEP SC receives bill and reallocates to operating companies?

3:44:12 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace In current/previous positions, did you/do you communicate with PJM on behalf of Kentucky Power or other PJM operating companies?

3:44:58 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace What doing four jobs ago?

3:45:38 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Would have been Kentucky Power as LSE and generation owner?

3:46:10 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Go-between for AEP SC to PJM, what interaction following interaction with PJM with Kentucky Power, itself?

3:46:55 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace Did the settlements, expect information gleaned helped inform subsequent filings at Commission, fair?

3:47:32 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace More of you sending information or particular people, where was interaction with Kentucky Power?

3:48:22 PM Chairman Chandler - witness Vaughan
Note: Sacre, Candace In positions like that, information pushed from AEP or pulled from Kentucky Power?

3:48:44 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	When settlements ended, did you send information on to person or people at Kentucky Power, or did they request that information?
3:49:37 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Do any operating companies have varying levels of expertise at settlements or expected to be at AEP SC?
3:50:25 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Experience operating companies designate somebody as ombudsman has experience so operating companies informed what information means?
3:51:38 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Know of other operating companies part of power coordination agreement, long, short or adequate capacity related to what requirements for PJM are?
3:52:29 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	In agreement applies to Kentucky Power, Kentucky Power being leaned on or Kentucky Power leaning?
3:54:31 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Kentucky Power long and another short, is plant an aggregate or on an individual operating company basis?
3:56:15 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Kentucky Power currently long, whether case after UPA expires yet be seen, what benefit Kentucky Power getting part of this plan verse asking AEP SC to create its own FRR plan for Kentucky Power?
3:58:29 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Have copy of agreement?
3:58:45 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Turn to Sheet 20, delivery year and post-delivery year settlement, second paragraph, see that?
3:59:26 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Capacity performance assessments discussing earlier?
3:59:49 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Reading (click on link for further comments.), read correctly?
4:00:20 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Goes on to say, reading (click on link for further comments), does this say what you were saying, spreads out risk or each operating company responsible for capacity performance charges it causes?
4:02:34 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Which of units included in plan not subject to capacity performance and will receive bonuses?
4:03:02 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Saying each one of units provided on its UCAP basis?
4:03:40 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	UCAP baseline compared to, based off unit UCAP?
4:04:04 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Benefit is insofar certain resources underperform relative to UCAP baseline for that year's plan?
4:05:12 PM	Chairman Chandler - witness Vaughan Note: Sacre, Candace	Referring to performance assessment intervals, if PJM call one of those, terms using under-perform and over-perform, specific unit basis as compared UCAP included in plan that year that unit?
4:06:21 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
4:06:41 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.

4:06:55 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Mr. Mattison.
4:08:40 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:08:59 PM	Atty Miller Sierra Club - witness Note: Sacre, Candace	Mattison Recross Examination. Application for Declaratory Order discussed a little after we spoke -
4:09:10 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Brought Mattison back issue Transco, not think appropriate redredge discussion extended period this morning.
4:09:32 PM	Chairman Chandler Note: Sacre, Candace	Limited purpose recalled Mattison discuss items come up since testimony, have any questions?
4:09:55 PM	Atty Miller Sierra Club Note: Sacre, Candace	Mattison referred us to Spitznogle, nothing not addressed in response to Kentucky Power application, that will be fine.
4:10:28 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:10:44 PM	Vice Chairman Cabbage - witness Note: Sacre, Candace	Mattison Examination. Operating committee designed member for Kentucky Power?
4:11:11 PM	Vice Chairman Cabbage - witness Note: Sacre, Candace	Mattison Recall discussions operating committee incurring costs for ELG compliance?
4:11:34 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:11:44 PM	Chairman Chandler - witness Note: Sacre, Candace	Mattison Examination. Any relationship to AEP Kentucky Transmission Company setting budget or directing investments?
4:12:11 PM	Chairman Chandler Note: Sacre, Candace	Outstanding items. (Click on link for further comments.)
4:12:42 PM	Chairman Chandler Note: Sacre, Candace	Petition for formal conference. (Click on link for further comments.)
4:13:13 PM	Chairman Chandler Note: Sacre, Candace	Next update October 14. (Click on link for further comments.)
4:14:28 PM	Chairman Chandler Note: Sacre, Candace	Any motions or requests? (Click on link for further comments.)
4:15:40 PM	Chairman Chandler Note: Sacre, Candace	Anything else given deadlines? (Click on link for further comments.)
4:22:08 PM	Chairman Chandler Note: Sacre, Candace	Basis for application exclusively related to this Commission's orders not anything happened in West Virginia. (Click on link for further comments.)
4:25:22 PM	Chairman Chandler Note: Sacre, Candace	Anything on this issue?
4:25:33 PM	Atty Kurtz KIUC Note: Sacre, Candace	Reviewed petition, seems Kentucky Power is correct, West Virginia utility not need permission from this Commission build ELG or (inaudible) ELG on West Virginia power plant, Commission has 100% jurisdiction over actions of Kentucky Power as operator. (Click on link for further comments.)
4:28:02 PM	Chairman Chandler Note: Sacre, Candace	Mr. Miller, anything in addition?

4:28:14 PM	Atty Miller Sierra Club Note: Sacre, Candace	Sierra Club concurs what Kurtz just said. (Click on link for further comments.)
4:30:16 PM	Chairman Chandler Note: Sacre, Candace	Ms. Grundmann?
4:30:18 PM	Atty Grundmann Walmart Note: Sacre, Candace	Walmart not take position at this time.
4:30:24 PM	Chairman Chandler Note: Sacre, Candace	Mr. Overstreet?
4:30:26 PM	Atty Overstreet Kentucky Power Note: Sacre, Candace	Just to Kurtz point extent CCR expenses incurred by Kentucky Power, Commission has ability to review through environmental surcharge filings in future. (Click on link for further comments.)
4:32:17 PM	Chairman Chandler Note: Sacre, Candace	Take under advisement.
4:32:23 PM	Chairman Chandler Note: Sacre, Candace	Vice Chair? Commissioner Butler?
4:32:28 PM	Vice Chairman Cabbage Note: Sacre, Candace	Nothing.
4:32:31 PM	Commissioner Butler Note: Sacre, Candace	Nothing.
4:32:33 PM	Chairman Chandler Note: Sacre, Candace	Ms. Vinsel?
4:32:34 PM	Gen Counsel Vinsel PSC Note: Sacre, Candace	Nothing.
4:32:37 PM	Chairman Chandler Note: Sacre, Candace	Take oral request to consider application under advisement.
4:32:50 PM	Chairman Chandler Note: Sacre, Candace	Unaware any post-hearing data requests.
4:33:02 PM	Atty Glass Kentucky Power Note: Sacre, Candace	Upcoming dates, Sept 27 Order, brief by October 15. (Click on link for further comments.)
4:33:29 PM	Chairman Chandler Note: Sacre, Candace	Public notice. (Click on link for further comments.)
4:35:38 PM	Chairman Chandler Note: Sacre, Candace	Ms. Grundmann?
4:35:41 PM	Atty Grundmann Walmart Note: Sacre, Candace	Indicated this may be first of a future set of hearings. (Click on link for further comments.)
4:36:51 PM	Chairman Chandler Note: Sacre, Candace	Hearing adjourned.
4:37:04 PM	Session Ended	



Exhibit List Report

2021-00370 05Oct2021

Kentucky Power Company
(Kentucky Power)

Name:	Description:
KIUC EXHIBIT 1	DIRECT TESTIMONY OF BECKER CASE NO. 2021-00004

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company)
For Approval of A Certificate of Public Convenience)
And Necessity For Environmental Project)
Construction At The Mitchell Generating Station, An)
Amended Environmental Compliance Plan, And)
Revised Environmental Surcharge Tariff Sheets)

Case No. 2021-00004

DIRECT TESTIMONY OF
MARK A. BECKER
ON BEHALF OF KENTUCKY POWER COMPANY

**DIRECT TESTIMONY OF
MARK A. BECKER ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2021-00004

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VI. REPLACEMENT RESOURCES	14
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EXHIBITS

<u>EXHIBIT</u>	<u>DESCRIPTION</u>
EXHIBIT MAB-1	Economic Analysis Summary
EXHIBIT MAB-2	Capacity Positions

**DIRECT TESTIMONY OF
MARK A. BECKER ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2021-00004

I. INTRODUCTION AND BACKGROUND

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Mark A. Becker, and my business address is 212 East Sixth Street, Tulsa,
3 Oklahoma.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by the American Electric Power Service Corporation (“AEPSC”) as a
6 Managing Director of Resource Planning.

7 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL**
8 **BACKGROUND.**

9 A. I received a Bachelor of Science degree in Electrical Engineering from the University of
10 Arkansas in 1983. I have over 35 years of experience working for investor-owned and
11 municipal electric utilities and energy trading companies. The majority of my experience,
12 approximately 30 years, has been related to performing a utility’s resource planning and
13 operational analysis functions using the proprietary long-term resource optimization
14 software models known as Strategist® and PLEXOS®.

15 **Q. WHAT ARE YOUR PRINCIPAL AREAS OF RESPONSIBILITY?**

16 A. I am responsible for the coordination and performance of long-term generation resource
17 planning studies using the PLEXOS® modeling software tool for Kentucky Power
18 Company (“Kentucky Power” or the “Company”) and the other regulated operating
19 companies within American Electric Power Company, Inc. (“AEP”). The PLEXOS®

1 studies include the development of Integrated Resource Plans (“IRP”) and the economic
2 evaluation of generating unit disposition alternatives for AEP’s regulated operating
3 companies, including Kentucky Power. This includes ongoing evaluations of generating
4 unit disposition alternatives as external factors change that could alter the companies’ plans
5 for those generating units going forward.

6 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN ANY REGULATORY**
7 **PROCEEDINGS?**

8 A. Yes. I have filed written testimony or testified in regulatory proceedings on behalf of AEP
9 regulated operating companies in Louisiana, Arkansas, Texas, and Oklahoma. In addition,
10 I testified before this Commission in Kentucky Power Company’s December 2011
11 Environmental Compliance Plan filing (Case No. 2011-00401) and filed Direct Testimony
12 in support of Kentucky Power’s application (Case No. 2012-00578) for a Certificate Of
13 Public Convenience And Necessity for the partial transfer of AEP Ohio Power’s interest in
14 the Mitchell Generating Station (“Mitchell” or “Mitchell Plant”) to Kentucky Power
15 Company.

II. PURPOSE OF TESTIMONY

16 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

17 A. The purpose of my testimony is to describe an analysis I prepared and presented to the
18 Company for consideration in its evaluation of the costs and benefits of making certain
19 Coal Combustion Residual (“CCR”) and Effluent Limitation Guideline (“ELG”)
20 compliance expenditures at the Mitchell Plant. The potential investment would enable
21 Mitchell to continue to provide capacity and energy value to customers, and delay hundreds
22 of millions of dollars of investments in replacement capacity, through 2040, Mitchell’s

1 currently planned retirement year. In addition, I evaluated a CCR Only compliance option,
2 under which the Mitchell Plant must be retired at the end of 2028. Each of these two
3 compliance options was evaluated under three different fundamental pricing forecasts,
4 for a total of six scenarios, as follows:

- 5 1) Case 1 (CCR and ELG) - Assumes that both of the CCR and ELG compliance
6 expenditures, totaling \$67 million, are made at Mitchell and it continues to operate
7 until December 31, 2040, when replacement capacity is obtained. This compliance
8 option was evaluated under three fundamental pricing scenarios: Base with Carbon,
9 Base No Carbon, and Low No Carbon.
- 10 2) Case 2 (CCR Only) - Assumes that only the CCR compliance expenditures, totaling
11 \$18 million, are made at Mitchell and it continues to operate until December 31,
12 2028, when replacement capacity is obtained. This compliance option was also
13 evaluated under the three fundamental pricing scenarios described above in Case 1.

14 **Q. ARE YOU SPONSORING ANY SCHEDULES OR EXHIBITS IN THIS**
15 **PROCEEDING?**

16 A. I am sponsoring the following exhibits, which are attached to my testimony:

- 17 • Company Exhibit MAB-1 – Economic Analysis
18 • Company Exhibit MAB-2 – Capacity Plans

III. ECONOMIC ANALYSIS SUMMARY

19 **Q. PLEASE DESCRIBE THE BASIC GOAL OF YOUR ANALYSIS.**

20 A. The economic analysis is designed to help the Company answer the question of whether
21 making the CCR and ELG compliance investments makes economic sense for customers.
22 Planning decisions such as this will have long-term cost of service impacts, and thus should
23 be evaluated based on the net present value (“NPV”) of the cost and revenue impacts. The
24 NPV effects of the compliance decision here largely rest on the incremental cost of CCR
25 and ELG compliance, plus the future cost profile of Mitchell versus the next best option to
26 replace it if it retires in 2028 without making certain compliance investments. The next
27 best option in this context represents the lowest cost replacement resource, or combination

1 of resources, which could be used to replace Mitchell. A 2028 retirement of either of the
 2 two units at Mitchell will create a need for replacement capacity to cover the Company's
 3 peak load obligations. Thus, this analysis necessarily requires an evaluation of other
 4 capacity options compared to continued operation of Mitchell.

5 **Q. WHAT WERE THE RESULTS OF YOUR ANALYSES?**

6 A. The NPV of the forecasted cost of service differences between Case 1 and Case 2 is
 7 summarized in Table 1, along with the cost of compliance provided to me by Company
 8 Witness Brian D. Sherrick. Amounts in Table 1 and throughout my testimony and exhibits
 9 represent the Company's 50 percent ownership share of both Mitchell units. Positive
 10 values in this table mean that Case 2 (CCR Only) is expected to result in slightly higher
 11 NPV of customer costs (i.e. more costly for customers), under both the Base No Carbon
 12 and Low No Carbon fundamental forecasts, than Case 1's CCR and ELG analysis.
 13 Negative values suggest a CCR Only strategy will be less costly for customers under the
 14 Base With Carbon fundamental forecast.

Table 1 - Incremental Cost of 2028 Retirement						
Kentucky Power Company's Half of Mitchell				NPV of Customer Revenue Requirement Increase / (Savings) Versus Case 1 (\$ Millions)		
Case Number	Case Description	Retirement Year	Compliance Capital Cost (\$ million)	Base With Carbon	Base No Carbon	Low No Carbon
Case 1	Mitchell CCR and ELG	2040	67			
Case 2	Mitchell CCR Only	2028	18	(6)	27	20

1 The NPV amounts in Table 1 represent a difference between cases of less than 1% of the
2 total NPV of Kentucky Power's expected total energy production cost of service, which is
3 expected to be between \$3.5 and \$4.3 billion (depending on the case) over the entire study
4 period. Total study period NPV's are shown in my Exhibit MAB-1. Under the base case
5 scenario, which includes a carbon tax, the Case 1 (CCR Only) alternative is slightly less
6 expensive (\$6 million) for customers. Under the other two scenarios which exclude a
7 carbon tax, a CCR-only strategy and 2028 retirement are estimated to be slightly more
8 expensive for customers (\$20 to \$27 million) on an NPV basis than running the Mitchell
9 Plant through 2040.

10 **Q. WHAT ARE THE MAIN DRIVERS OF THE ANALYSIS?**

11 A. There are three main drivers. The first key driver in this economic analysis is the future
12 Mitchell capital and operating cost, inclusive of the CCR and ELG compliance cost, net of
13 the energy value of continuing to operate the units. Amounts already invested in the plant
14 as of the time of this filing are considered sunk costs and are not included in my analysis.
15 The second key driver is the initial capital cost, future operating costs or purchased power
16 cost, net of energy value of resources which would be needed to replace Mitchell if it were
17 to retire in either 2040 (Case 1) or 2028 (Case 2). The third key driver is the forecast of
18 power and fuel prices, including how those are influenced by possible future carbon
19 regulations.

20 **Q. COULD YOU PLEASE PROVIDE A HIGH LEVEL DESCRIPTION OF YOUR**
21 **ANALYSIS?**

22 A. The methodology used in the analysis was the same process the Company typically
23 employs in planning analyses. A few changes in assumptions were required in order to

1 provide an answer to the question at hand in this proceeding, which is focused on the
2 economic impacts of a 2028 retirement of Mitchell if ELG compliance investments are not
3 made.

4 To summarize the major pieces of the analysis, the first step was to prepare a
5 forecast of the Company's load requirements and available generation resources, known as
6 a Capability, Load, and Reserve ("CLR") analysis. This was prepared with and without
7 Mitchell to determine the need for generating resources to meet customers' peak demand
8 requirements, including satisfying the PJM Interconnection LLC ("PJM") minimum
9 capacity reserve margin requirement.

10 The second step was to forecast the incremental future capital requirements and
11 fixed and variable operating costs for Mitchell (with and without compliance costs), the
12 balance of the Company's generation resources, along with a wide range of resource
13 options which could be considered to replace them when they retire.

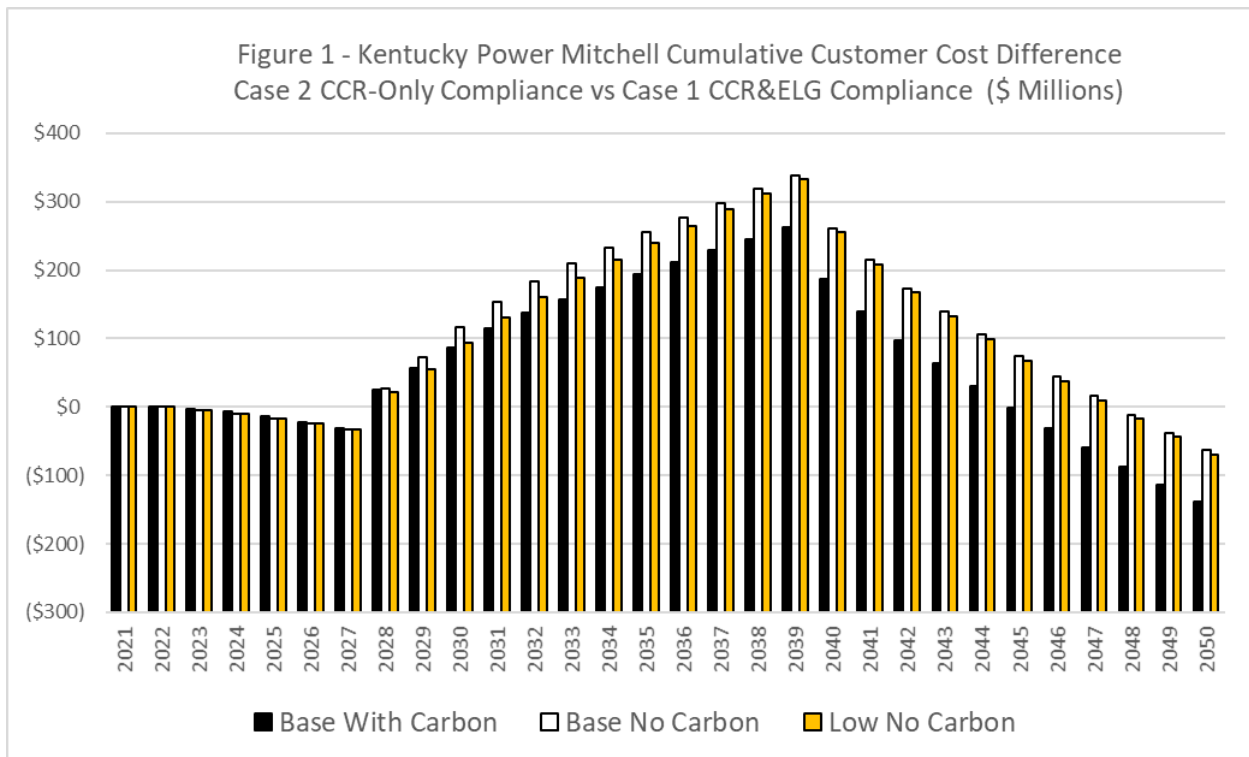
14 The third step was to use the PLEXOS® model to select optimal resources needed
15 to serve load with and without Mitchell at the lowest cost. The model forecasts the
16 generation output and energy value based on an economic dispatch, and nets that value
17 against the fixed costs of each resource option under multiple commodity price scenarios.

18 **Q. WHAT DO YOU EXPECT THE ANNUAL FINANCIAL IMPACTS OF A 2028**
19 **RETIREMENT WILL BE OVER THE FORECAST PERIOD?**

20 A. This is illustrated below in Figure 1. That graph depicts the cumulative nominal difference
21 in net customer costs in millions of dollars through 2050, whereby the annual cost
22 difference in each year is added to the prior year's cumulative total impact moving from
23 left to right across the graph. This view is shown for all three fundamental forecast cases.

1 The three bars are relatively close to each other, which indicates that the analysis is not
 2 very sensitive to the differences in fundamental forecast assumptions.

3 The size of each bar on Figure 1 represents the cumulative difference between Case
 4 2, which is a CCR Only 2028 retirement case, and Case 1, which represents a CCR and
 5 ELG compliance case with a 2040 retirement. Bars below zero represent a cumulative net
 6 savings to customers. Bars above zero represent a cumulative net cost to customers.



7 If the Company were to incur only the CCR compliance cost and retire Mitchell in 2028,
 8 customers would initially see a savings through 2027 versus the Case 2 CCR and ELG
 9 compliance option. This is largely because the capital investment for ELG compliance
 10 would not be incurred. In addition, the Company has assumed in this analysis that other
 11 maintenance capital and landfill capital expense could be reduced in the 2023-2028 period
 12 immediately prior to retirement, creating customer savings.

1 **Q. WOULD THE INITIAL SAVINGS UNDER CASE 2 (CCR ONLY) CHANGE WITH**
2 **THE REQUIRED RETIREMENT OF MITCHELL BEGINNING IN 2028?**

3 A. Yes. The period between 2028 and 2039 is the critical period when the customer costs
4 would increase because of the need to replace the Mitchell capacity due to its retirement.
5 Without Mitchell, customers will incur approximately \$500 million of replacement
6 capacity costs in 2028 that would be delayed by making investments to comply with the
7 ELG Rule. Notably, the cumulative impact switches from a net savings to a net cost in the
8 year Mitchell would be retired (2028) due to the cost of replacement resources.

9 Each of the years 2028 through 2039 would result in large net costs to customers
10 under Case 2 where only the CCR compliance investments made. In Figure 1, the
11 cumulative net cost of Case 2 (CCR Only) grows to between \$263 million and \$338 million
12 by 2039. It is these years that drive the NPV of a compliance decision. Then, beginning
13 in 2040, the cumulative net cost of Case 2 (CCR Only) begins to decline. This is because
14 additional investments for new resources would be needed if Mitchell retires in 2040.
15 Beginning in 2040, the cost of those new resources begins to appear in the cost of service
16 in Case 1, reducing the difference between Case 1 (CCR and ELG) and Case 2 (CCR Only).
17 The cumulative impact of Case 2 (CCR Only) versus Case 1 (CCR and ELG) flips from a
18 net cost to a net savings to customers between 2046 and 2048, depending on the
19 fundamentals case. The cumulative net savings under Case 2 (CCR Only) reaches between
20 \$62 million and \$139 million by 2050.

IV. CAPACITY, LOAD, AND RESOURCE (“CLR”) ANALYSIS

1 **Q. PLEASE DESCRIBE THE CLR ANALYSIS.**

2 A. The first step in the CLR analysis is to determine how many megawatts of replacement
3 capacity would be needed, and when, if Mitchell retires. This involves forecasting load
4 and resources in order to determine the amount of capacity that will be needed to meet
5 PJM’s minimum reserve margin requirement.

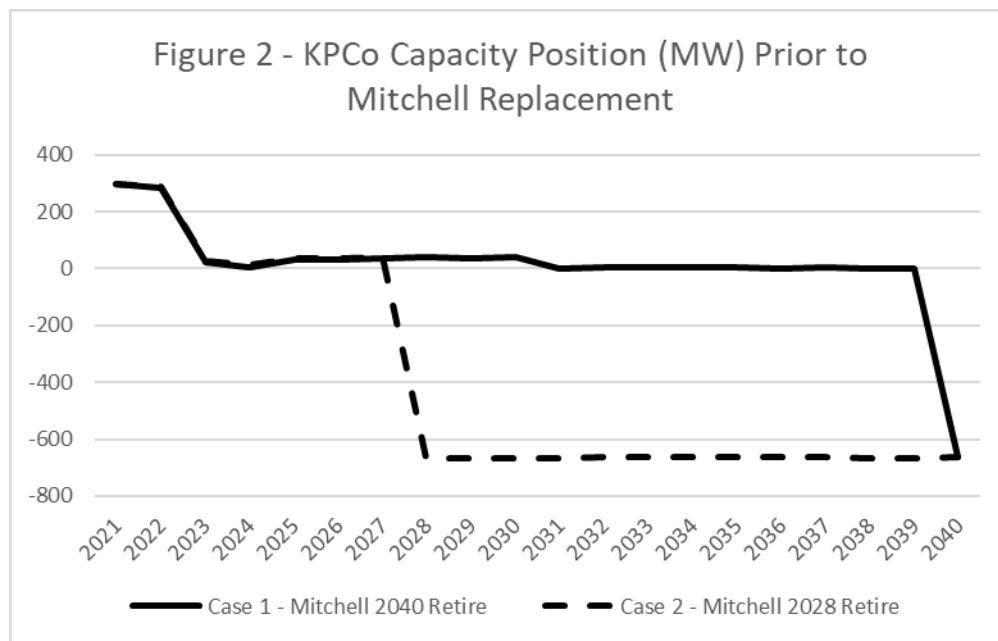
6 **Q. WHAT IS PJM’S MINIMUM RESERVE MARGIN REQUIREMENT?**

7 A. This requirement can be described in two ways. The requirement is forecasted to be 14.9%
8 on an installed capacity (“ICAP”) or nameplate basis, or 8.6% on an unforced capacity
9 (“UCAP”) basis. The difference between ICAP and UCAP is the downward adjustment
10 that PJM makes for an assumed forced outage rate to get to UCAP. For modeling purposes,
11 all capacity must be converted from nameplate megawatts into UCAP megawatts, applying
12 an assumed forced outage rate and other reductions in credited capacity as determined by
13 PJM, which I will discuss later in my testimony. A utility must maintain reserve capacity
14 (Capacity – Peak Load) of at least 8.6% of UCAP above its peak load, based on the most
15 recent PJM capacity auction. For example, if a utility has a capacity of 1,086 UCAP
16 megawatts (MW) and a peak load of 1,000 MW, then its reserve margin would be 8.6%
17 $((1,086 - 1,000)/1,000)$. The CLR analysis solves for the optimal lowest-cost plans to
18 maintain that level of reserve margin.

19 **Q. PLEASE DISCUSS THE INITIAL CLR CAPACITY POSITIONS FOR THE**
20 **SCENARIOS YOU PREPARED.**

21 A. The initial CLRs are reflective of the Company’s UCAP capacity position prior to the
22 addition of new capacity resources to satisfy the PJM minimum reserve requirement. The

1 capacity position refers to the number of megawatts above or below the PJM minimum
 2 reserve requirement (calculated on an UCAP basis) described above. Figure 2 provides
 3 Kentucky Power's projected capacity positions under assumed 2028 and 2040 retirements.
 4 Once the Company's Rockport unit power agreement ends in 2022, Kentucky Power's
 5 capacity is roughly equal to the load requirement plus its required reserve margin. This
 6 drops to a roughly 700 MW short position when Mitchell retires in either case. This
 7 analysis demonstrates that Mitchell could not be retired without being replaced.



V. MODELING PROCESS AND MAJOR ASSUMPTIONS

8 **Q. PLEASE DESCRIBE YOUR MODELING PROCESS.**

9 A. The PLEXOS® model uses linear programming to produce optimal resource plans for a
 10 given set of inputs, such as market energy prices and operating and capital costs of each
 11 available resource. The optimal plan is defined as the group of resources which produces
 12 the lowest NPV of customer costs net of revenues over the forecast window. The

1 PLEXOS® model was used to produce simulations of the hourly economic dispatch of the
2 Company's existing generating resources through their assumed retirement dates, and a
3 suite of available new resource options through 2050 in the PJM energy market, to
4 determine each of the scenarios' annual variable energy production revenues and costs.
5 This planning tool is intended to produce a view of what plausible least-cost resource plans
6 could look like under a given set of assumptions. Actual future resource additions could
7 differ based on market conditions and resource availability at the time.

8 **Q. WHAT ARE THE VARIABLE AND FIXED CHARGES CONSIDERED IN**
9 **CONNECTION WITH THE MODELING?**

10 A. Variable energy production costs include fuel costs, variable operations and maintenance
11 ("O&M") costs, emission costs, if any, and emission retrofit reagent costs. In addition to
12 variable energy production revenues and costs, the fixed costs for each existing and new
13 resource option were calculated. Fixed costs for all resources included annual fixed O&M
14 costs and recovery of levelized carrying charges on future on-going capital expenditures,
15 including the CCR and ELG capital expenditures. The current capital investment in
16 Mitchell is a sunk cost which is assumed to be recovered from customers equally in all
17 scenarios. The current capital investment in Mitchell thus was excluded from the analysis.

18 Levelized fixed charge rates, which include a return on capital investment, income
19 and property taxes, and depreciation, were applied to the CCR and ELG capital and all
20 future capital expenses by PLEXOS® for computational efficiency. These levelized rates
21 produce the same NPV of carrying costs over the lifetime of an investment as would
22 carrying charges based on a forecast of rate base declining with depreciation over time.

1 **Q. WHAT DO THE ANNUAL NET COST FOR EACH OF THE TWO CASES**
 2 **REPRESENT?**

3 A. The annual net cost for each of the scenarios was created by netting the annual variable
 4 and fixed costs for Mitchell, the Company’s other generating resources, and the new
 5 resource additions against the annual revenues that those resources would receive from
 6 making energy sales into the PJM energy market. The NPV of the annual net costs was
 7 calculated for each CCR and ELG compliance scenario and used as a basis to compare the
 8 economics of those scenarios.

9 **Q. PLEASE DESCRIBE THE CCR AND ELG COMPLIANCE COST USED IN THE**
 10 **TWO CASES.**

11 A. Table 2 provides a summary of the Case 1 (CCR and ELG) and Case 2 (CCR Only)
 12 compliance costs provided to me by Company Witness Sherrick for use in the analysis.

**TABLE 2 - Kentucky Power's half of Mitchell CCR and
 ELG Compliance Investment Costs**

		Compliance Cost (\$ Millions)
Case 1 (CCR and ELG) (2040 Retirement)	Capital	\$66
	ARO	\$1
	Total	\$67
Case 2 (CCR Only) (2028 Retirement)	Capital	\$13
	ARO	\$5
	Total	\$18

1 **Q. WHAT ASSUMPTIONS DID YOU MAKE ABOUT FUTURE INCREMENTAL**
2 **CAPITAL COSTS AT MITCHELL?**

3 A. In Case 1 (CCR and ELG), where the Mitchell Plant is assumed to operate through 2040,
4 the CCR and ELG compliance capital plus 100% of the ongoing capital expense forecasts
5 were included through 2035. From 2036 until 2040 a “glide path” capital expense forecast
6 was used where maintenance capital is reduced during those years as the 2040 retirement
7 date approaches. For the Case 2 (CCR Only) compliance scenarios (2028 retirement), only
8 the CCR compliance costs were included, plus a glide path reduced capital expense forecast
9 for the ongoing maintenance capital between 2023 and 2028. In addition, the ongoing
10 landfill expansion capital, which would be required to operate beyond 2028, was
11 eliminated entirely.

12 **Q. WHAT ASSUMPTIONS DID YOU MAKE REGARDING THE FUTURE**
13 **OPERATIONS AND MAINTENANCE COSTS AT MITCHELL?**

14 A. The Company assumed that the currently forecasted level of O&M through 2029 was used
15 in all cases. In years after that, in the 2040 retirement case (Case 1), O&M was maintained
16 at that level. This assumption will likely produce higher than actual costs in light of the
17 reduced capacity factors that the economic dispatch model predicts could happen if power
18 prices and fuel costs turn out as they have been forecasted. Also, it is very likely that less
19 maintenance, waste disposal, and other costs would be required if the units run at those
20 reduced capacity factors. That potential upside for customers during the 2029-2040 period
21 has not been included in this analysis. Lower O&M consistent with operations primarily
22 as a capacity resource out in the 2030’s would make the economics of Case 1 (CCR and
23 ELG) less expensive for customers than shown in Figure 1.

VI. REPLACEMENT RESOURCES

1 **Q. WHAT RESOURCES WERE AVAILABLE FOR THE MODEL TO SELECT TO**
 2 **REPLACE MITCHELL UPON ITS RETIREMENT IN EITHER CASE 1 OR**
 3 **CASE 2?**

4 A. For this analysis the Company elected to adopt the U.S. Energy Information
 5 Administration’s (“EIA”) major utility scale options as the primary options available in
 6 PLEXOS® to pick from in forming optimal resource plans. These primary options are
 7 summarized in Table 3.¹ Supply-side resource options including natural gas
 8 base/intermediate and peaking generating technologies and intermittent renewable
 9 resources including large-scale solar, wind and battery storage were considered in this plan.
 10 In addition, a range of demand-side load reduction options not shown in Table 3 were also
 11 considered.

TABLE 3

Type	Capability (MW) (e)			Installed Cost (d,f) (\$/kW)	Capacity Factor (%)	LCOE (g) (\$/MWh)
	Std. ISO	Summer	Winter			
Base Load						
SMALL MODULAR REACTOR NUCLEAR POWER PLANT, 600 MW	600	580	630	7,700	90	135.9
ULTRA-SUPERCRITICAL COAL WITH 90% CO ₂ CAPTURE, 650 MW	650	630	690	6,700	75	174.5
COMB TURBINE H CLASS, COMB-CYCLE SINGLE SHAFT W/90% CO ₂ CAPTURE, 430 MW	370	370	390	1,400	75	94.1
COMB TURBINE H CLASS, 1100-MW COMBINED CYCLE	1,080	1,060	1,110	1,100	75	52.6
COMB TURBINE H CLASS, COMBINED-CYCLE SINGLE SHAFT, 430 MW	420	410	430	1,300	75	59.5
Peaking						
COMB TURBINE F CLASS, 240-MW SIMPLE CYCLE	230	240	250	700	25	92.4
COMB TURBINES AERODERIVATIVE, 100-MW SIMPLE CYCLE	100	110	110	1,200	25	118.9
INTERNAL COMBUSTION ENGINES, 20 MW	20	20	20	2,000	25	167.3
Intermittent						
BATTERY ENERGY STORAGE SYSTEM, 50 MW / 200 MWH	50	50	50	1,471	25	119.1
ONSHORE WIND, LARGE PLANT FOOTPRINT, 200 MW(2024 Inst. Cost)	200	200	200	1,317	35	41.4
SOLAR PHOTOVOLTAIC, 150 MWAC (2021 Inst. Cost)	150	150	150	1,195	25	56.0

¹ The Company referred to the EIA ANNUAL ENERGY OUTLOOK 2020 report (<https://www.eia.gov/outlooks/aeo/pdf/aeo2020.pdf>) and the associated EIA Capital Cost and Performance Characteristic Estimate for Utility Scale Electric Power Generating Technologies (https://www.eia.gov/analysis/studies/powerplants/capitalcost/pdf/capital_cost_AEO2020.pdf) to inform the analysis process.

1 To reduce the computational problem size within PLEXOS®, the number of
2 alternatives explicitly modeled was reduced through an economic screening process which
3 analyzed various supply options and developed a quantitative comparison on a 40 year
4 levelized basis. For example, new coal and nuclear units were not considered as resource
5 options for the purposes of the Company’s modeling due to their relatively high capital
6 costs. However, it is important to note that alternative technologies with comparable cost
7 and performance characteristics may ultimately be substituted should technological or
8 market-based profile changes warrant.

9 Also, when available, the Company may take advantage of economic market
10 capacity and energy opportunities. Prospectively, these opportunities could take the place
11 of currently planned resources and will be evaluated on a case-by-case basis pursuant to
12 through requests for proposals (RFPs). Other technologies included in the EIA report were
13 not included in the modeling due to their respective costs and to improve modeling process
14 time.

15 **Q. DID THE COMPANY MODEL THE USE OF POWER PURCHASE**
16 **AGREEMENTS (“PPA”) TO REPLACE SOME OR ALL OF THE MITCHELL**
17 **CAPACITY?**

18 A. Yes. While the Company sees considerable risk in relying on a significant level of a series
19 of one-year PPAs in long-term resource planning, the model was also given a one year
20 capacity-only PPA option to pick from. This option was made available to test if energy
21 market prices in the three fundamental forecast scenarios were at a low enough level which
22 would suggest a capacity-only PPA could economically replace resources which provide
23 both energy and capacity. The assumed capacity price for the PPA was based on a forecast

1 of the PJM capacity market price in each of the three cases. Those prices are described in
2 the testimony of Company Witness Trecuzzi. This price was used based on the reasonable
3 assumption that the owner of any available capacity resource would not rationally accept
4 less than that price in exchange for committing that capacity in a bilateral contract, rather
5 than bidding it into the annual capacity auction that is available to PJM market participants.

6 The single-year capacity-only PPA option was capped at 400 MW. The cap was
7 appropriate given the significant uncertainty regarding the availability of capacity. Such a
8 resource would have to be a resource that had not already been committed elsewhere. In
9 addition, the owner of the resource must be willing to execute short-term deals with a price
10 and other terms and conditions acceptable to both parties. This short-term option would
11 not entitle the Company to any energy, and thus would increase exposure to the PJM energy
12 market price risk, versus the market hedge that comes with owning an actual physical
13 resource or contracting for both capacity and energy. Prudent long-term planning should
14 not include reliance on this type of short-term resource for anything but a contract to cover
15 a small portion of total capacity requirements, because of the uncertainty and risk that
16 comes with it.

17 **Q. WHAT TECHNOLOGIES WERE SELECTED BY THE MODEL TO REPLACE**
18 **MITCHELL IF IT WERE TO RETIRE?**

19 A. The nameplate capacity of the major additions selected by the model as replacements for
20 Mitchell if it were to retire in 2040 (Case 1) are summarized below in the top half of Table
21 4. These amounts also include replacements for Big Sandy 1, which is assumed to retire
22 and be replaced in 2030. The resources selected in the 2028 retirement case (Case 2) in
23 the bottom half of Table 4, are smaller because they only include Mitchell replacements.

1 Exhibit MAB-2 shows the modeled optimal capacity resource plans on a UCAP basis for
 2 Case 1 and Case 2 by year for the three fundamental pricing scenarios, including the
 3 resources shown in Table 4.

**TABLE 4 - KPCo Optimal Major Replacement Capacity Additions Through the Retirement Year -
 Nameplate Megawatts**

	Gas Combustion Turbines	Cumulative Solar	Cumulative Wind	Capacity Only PPA	Total
<u>Case 1 - Mitchell CCR&ELG 2040 Retirement (Resource Additions from 2021-2040) *</u>					
Base with Carbon	480	450	400	300	1,630
Base No Carbon	480	300	-	400	1,180
Low No Carbon	480	300		400	1,180
<u>Case 2 - Mitchell CCR Only 2028 Retirement (Resource additions from 2021-2028) *</u>					
Base with Carbon	480		400	150	1,030
Base No Carbon	480			200	680
Low No Carbon	480			200	680
* Case 1 additions through 2040 include replacements for both Mitchell and Big Sandy 1. Big Sandy 1 is assumed to retire in 2030. Case 2 additions through 2028 only include replacements for Mitchell.					

4 Resource selection is heavily driven by the amount of credit each type of resource
 5 is given towards a capacity obligation vis-a-vis other options. I will discuss this further
 6 later in my testimony. Table 4 represents which replacement resources would be expected
 7 to produce the lowest overall costs, if the assumptions embedded in the scenarios (such as
 8 power and gas prices) turn out as they have been forecasted.

9 **Q. CAN YOU PROVIDE FURTHER DETAIL REGARDING THE RESOURCE**
 10 **SELECTIONS?**

11 A. The attributes of the gas combustion turbines (“CT”), PPA, solar, and wind resources that
 12 were modeled are:

- 1 1. CTs were picked to provide the majority of the 2028 replacement resource. The 480
2 MW CT which the model selected is expected to cost \$445 million.
- 3 2. Either 150 or 200 MW of short-term capacity-only PPAs were selected in the three
4 2028 retirement scenarios. The fact that less than the full 400 MW of PPA available to
5 the model was selected indicates that resources which also provide energy are
6 preferable in those scenarios, given the energy and capacity price forecasts. PPAs
7 totaling 300 MW or 400 MW were selected in the 2040 retirement cases. The additional
8 PPA capacity was selected in part to replace Big Sandy 1.
- 9 3. 450 MW of solar assets were selected in all cases, although additions would not be
10 expected to be added economically until after 2028. The model first selected solar in
11 2030 when Big Sandy 1 is forecasted to retire. Per Table 3 above, EIA expects each
12 150 MW block of solar would cost \$1,195/KW (or \$213 million) if built today. EIA
13 expects the cost of solar to decline significantly between now and 2028, and this decline
14 was incorporated into the modeling. Other resource types also are expected to be less
15 costly capacity during that timeframe.
- 16 4. Wind was added in these optimal plans only when a carbon burden was included. Power
17 prices are higher in those cases, making wind an economically attractive option when
18 combined with production tax credits expected to be available through 2025.

19 **Q. WHY DID THE MODEL SELECT GAS COMBUSTION TURBINES AS THE**
20 **PRIMARY REPLACEMENT CAPACITY OPTION?**

21 A. At the low level of market energy prices contained in these forecasts, energy available from
22 the PJM market is inexpensive, and thus the model did not pick resources with higher
23 capital costs such as combined cycle gas units, which are more efficient and would be
24 anticipated to generate significant amounts of energy as well as capacity. In addition,
25 renewable resources are less valuable when market prices are low. As a result, the model
26 solved for the lowest overall cost by picking the least expensive capacity options available.
27 These plans would result in very heavy reliance on the PJM energy market for the energy
28 needed to serve customers.

29 Capacity affordability is driven by both the up-front installation cost (as shown
30 above in Table 3) and the credit as a percentage of nameplate capacity each type of resource
31 will receive in PJM's capacity market construct. I have illustrated the combination of these

1 two factors below in Table 5. Solar and wind resources receive a much smaller fraction of
 2 their nameplate capacity value as a credit than Mitchell or a gas CT receives. The
 3 percentage of nameplate capacity accorded wind and solar resources will decline over time
 4 if the amounts of those technologies installed grows substantially as has been predicted,
 5 and if PJM’s proposed Effective Load Carrying Capability (“ELCC”) methodology is
 6 approved by FERC. PJM’s latest projection available when this analysis was performed
 7 would result in a 12% credit for wind and 40% credit for Solar in 2028 when capacity
 8 would be needed. The Company would get much more value for an investment in natural
 9 gas units when viewed on a firm capacity basis because of the high capacity credit gas
 10 receives versus the other options.

Table 5 - Firm Capacity Cost Comparison				
Capacity Investment Alternatives - Projected to 2028 in-service date	Nameplate Capacity MW	2028 PJM Firm Capacity Credit %	2028 PJM Firm Capacity MW	Projected 2028 Capital Investment (\$ Millions)
Natural Gas CT Capacity - \$900/KW	703	95%	668	\$633
Unsubsidized Solar Capacity - No ITC \$1,000/KW	1,670	40%	668	\$1,670
Subsidized Solar Capacity - 30% ITC \$700/KW	1,670	40%	668	\$1,169
Wind Capacity - \$1,200/KW	5,567	12%	668	\$6,680

VII. TRANSMISSION IMPACTS

11 **Q. WOULD RETIRING MITCHELL CREATE VOLTAGE OR THERMAL ISSUES**
 12 **WITH THE TRANSMISSION SYSTEM?**

13 A. Yes. AEP’s Transmission Planning group evaluated this issue and determined that
 14 Mitchell could not be retired without substantial investments in the high voltage
 15 transmission system, although the amount is somewhat dependent on if and when other

1 AEP plants retire. The Amos and Mountaineer plants owned by AEP affiliate Appalachian
2 Power Company (“APCo”) are also subject to CCR and ELG compliance requirements,
3 and similar CCR/ELG proceedings to this one are currently underway in West Virginia and
4 Virginia for those two plants. Amos serves an especially critical role in maintaining
5 stability near the center of AEP’s 765 kV transmission grid, as well as interconnections
6 with portions of the grid owned by neighboring utilities. The West Virginia proceeding
7 also includes Mitchell, which is co-owned between Kentucky Power and AEP Affiliate
8 Wheeling Power Company (“WPCo”).

9 If either Amos or Mitchell retire in 2028, with the other plant still operating, the
10 Company estimates that \$100 million of transmission upgrades would be required. If
11 Amos and Mitchell both retire in 2028, AEP estimates that an additional \$100 million of
12 transmission upgrades would be required, for a total of \$200 million. No additional
13 transmission upgrades would be anticipated beyond those needed for the Mitchell and
14 Amos retirements if Mountaineer also retires in 2028.

15 AEP estimates that roughly half of these investments would be required in the AEP
16 zone within PJM and half in the Allegheny zone, which leaves AEP’s share of the
17 transmission upgrades at \$50 million if the ELG compliance investments are not made at
18 Mitchell and it retires in 2028. Some of this would be spent in Ohio by Ohio Power
19 Company and some in West Virginia by a combination of APCo and WPCo. Transmission
20 costs such as these are allocated across all of the AEP East system companies under a cost
21 sharing agreement.

22 For the purposes of this analysis, I assumed that Kentucky Power would be
23 allocated 4.9% of the \$50 million AEP zonal share of the transmission investment required

1 if Mitchell retires in 2028, based on its load ratio share of the AEP Zonal peak load in 2019.
2 This amounts to \$2.5 million for Kentucky Power. A 50-year levelized carrying charge
3 was applied to that amount and the resulting annual cost of \$242,000 was included in the
4 Kentucky Power CCR only (Case 2) scenarios for each company beginning in 2028.

5 Predicting transmission impacts assuming these plants retire in 2040 is difficult.
6 Power flows on the grid could change significantly between 2028 and 2040 due to plant
7 retirements, load changes, new generation resources, and new transmission to serve them.
8 Despite these uncertainties, in this analysis the Company assumed the same level of
9 investment required in 2028 would also be required in 2040. Effectively, this means that
10 similar to delaying the replacement generation requirement by 12 years, the CCR and ELG
11 compliance investments will also delay the transmission investment.

12 **Q. COULD THESE TRANSMISSION CONSTRAINTS BE ELIMINATED WITH**
13 **REPLACEMENT RESOURCES?**

14 A. Yes. Replacement gas-fired resources that are sited either on the sites of these plants, or
15 located close by would eliminate the need for transmission investments that would be
16 caused by retirements. Due to their intermittent nature, wind and solar resources would
17 not eliminate the transmission impacts of plant retirements. Because of the transmission
18 issues, location will necessarily be a consideration when evaluating economics of
19 replacement assets. Assuming everything else is equal, replacement gas assets sited at
20 these plant locations would have a cost advantage and be easier to bring online, versus
21 resources located elsewhere.

1 **Q. WHAT TRANSMISSION COSTS WERE INCLUDED IN THE COSTS OF**
2 **REPLACEMENT RESOURCES IN THE CCR ONLY (CASE 2) SCENARIOS?**

3 A. For the purposes of this analysis, the cost of replacement resources assumed only the
4 minimal interconnection costs that EIA has incorporated in its new resource cost estimates.
5 In addition, no congestion costs were assumed to be incurred by the wind resources,
6 although additional congestion costs are a significant risk as wind continues to be added in
7 the PJM region.

8 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

9 A. Yes, it does.

Kentucky Power Company
 Mitchell CCR & ELG Analysis

2020 Base with Carbon Commodity Price Forecast											
		NPV Revenue Requirements (\$ Millions)				NPV of 2028 Retirement Net Cost/(Savings) versus Continued Operation Through 2040					
		2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period	2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period
Case 1	Mitchell CCR & ELG 2040 Retire	1,125	1,536	875	795	4,331	-	-	-	-	-
Case 2	Mitchell CCR Only 2028 Retire	1,104	1,667	795	759	4,325	(21)	130	(80)	(36)	(6)

2020 Base without Carbon Commodity Price Forecast											
		NPV Revenue Requirements (\$ Millions)				NPV of 2028 Retirement Net Cost/(Savings) versus Continued Operation Through 2040					
		2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period	2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period
Case 1	Mitchell CCR & ELG 2040 Retire	1,082	1,300	813	748	3,944	-	-	-	-	-
Case 2	Mitchell CCR Only 2028 Retire	1,059	1,466	734	712	3,971	(23)	165	(80)	(36)	27

2020 Low Band without Carbon Commodity Price Forecast											
		NPV Revenue Requirements (\$ Millions)				NPV of 2028 Retirement Net Cost/(Savings) versus Continued Operation Through 2040					
		2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period	2021-2027 Period	2028-2039 Period	2040-2050 Period	End-Effects Period	Total Study Period
Case 1	Mitchell CCR & ELG 2040 Retire	963	1,141	728	658	3,489	-	-	-	-	-
Case 2	Mitchell CCR Only 2028 Retire	940	1,299	648	622	3,509	(23)	158	(80)	(36)	20

KENTUCKY POWER COMPANY - CASE 2 CCR ONLY
2020 KP CCR/ELG ANALYSIS PLAN ASSUMING 12/31/28 MITCHELL RETIREMENT OPTIMAL PLAN
Base With Carbon Commodity Pricing

	Utility Costs (Nominal \$000)										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(1) thru (7) - (8)			
Load	Fuel Costs -	Emission	Mitchell Fixed O&M	Variable O&M (new	Levelized Return,	Marginal Losses /	Less:	GRAND TOTAL,		NPV	
Cost - 100% of	New and	Costs - New	and Ongoing Capital	and existing)	Taxes, and	Contracts	Market Energy	Net Utility		(7.07%)	
Load Purchased	Existing	and Existing	Recovery	+ Fixed O&M and	Depreciation - New		Revenue - 100% of	Costs			
at PJM Market	Resources	Resources		PPA Costs - New	Owned Resources		Generation sold at				
Energy Price				Resources			PJM Market				
							Energy Price				
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000			
2021	133,534	2,055	37,526	20,890	0	(2,487)	39,708	184,399	\$172,223		
2022	142,393	3,746	53,781	22,166	3,905	(2,655)	62,400	209,388	\$354,871		
2023	151,317	5,979	45,426	22,482	17,571	(2,827)	94,965	201,261	\$518,838		
2024	160,558	6,725	46,170	18,160	17,646	(3,004)	113,727	198,621	\$669,969		
2025	166,579	5,609	49,494	29,645	26,990	(3,110)	126,656	212,428	\$820,933		
2026	171,574	7,170	48,948	31,164	26,980	(3,200)	141,924	216,495	\$964,628		
2027	177,571	7,170	49,412	31,310	27,454	(3,309)	135,999	224,452	\$1,103,767		
2028	237,952	57,803	50,139	47,529	81,194	(4,450)	157,886	340,724	\$1,301,037		
2029	235,205	21,843	25,026	45,287	81,398	(4,394)	86,630	322,641	\$1,475,502		
2030	235,269	20,734	26,037	46,239	80,381	(4,399)	85,177	323,938	\$1,639,103		
2031	232,041	8,272	14,167	71,385	93,317	(4,336)	78,274	338,605	\$1,798,818		
2032	230,872	5,490	8,191	72,234	93,317	(4,307)	72,515	334,631	\$1,946,237		
2033	236,568	4,237	6,347	73,313	93,317	(4,412)	72,185	338,211	\$2,085,395		
2034	237,366	3,115	5,344	74,655	93,317	(4,419)	69,521	340,605	\$2,216,283		
2035	239,287	2,239	4,662	75,755	93,317	(4,454)	68,509	342,844	\$2,339,333		
2036	243,424	1,271	4,334	77,237	107,159	(4,533)	82,875	346,329	\$2,455,425		
2037	252,309	1,190	4,155	78,540	108,099	(4,699)	85,978	353,906	\$2,566,224		
2038	260,854	1,487	4,155	80,088	122,023	(4,858)	104,645	359,467	\$2,671,333		
2039	265,285	594	4,155	81,207	122,023	(4,940)	105,223	363,247	\$2,770,533		
2040	271,365	1,082	3,570	83,163	122,023	(5,053)	109,087	367,331	\$2,864,225		
2041	275,796	1,138	3,365	84,319	122,023	(5,140)	110,743	371,045	\$2,952,615		
2042	280,898	543	2,825	91,109	122,023	(5,233)	111,996	380,305	\$3,037,229		
2043	287,393	382	2,571	92,913	122,023	(5,355)	114,638	385,386	\$3,117,311		
2044	294,861	418	2,362	89,272	122,023	(5,489)	118,317	385,236	\$3,192,076		
2045	302,911	217	1,869	90,809	122,023	(5,639)	121,377	390,869	\$3,262,926		
2046	312,705	447	1,474	92,668	122,023	(5,832)	125,951	397,648	\$3,330,245		
2047	321,451	202	1,071	94,471	122,023	(5,990)	129,576	403,703	\$3,394,075		
2048	331,864	209	662	96,599	122,023	(6,189)	134,474	410,748	\$3,454,732		
2049	340,624	216	242	97,622	122,023	(6,348)	137,726	416,707	\$3,512,205		
2050	350,768	229	242	91,335	122,023	(6,535)	141,505	416,615	\$3,565,871		
	836,709	310,986	252,393	132,142	85,255	(15,614)	523,936	1,103,767			
	1,178,676	67,209	77,445	322,969	463,261	(21,989)	445,176	1,666,766			
	614,198	1,066	4,253	184,781	249,014	(11,444)	246,800	795,338			
								759,000			
								4,324,871			

Net Present Value \$000 (2021\$)
Utility NPV 2021-2027
Utility NPV 2028-2039
Utility NPV 2040-2050
NPV of End Effects beyond 2050
TOTAL Utility Cost, Net NPV (2021\$)

KENTUCKY POWER COMPANY - CASE 2 MINUS CASE 1
2020 KPCCO CCR/ELG PLAN DIFFERENCE BETWEEN 12/31/28 MITCHELL RETIREMENT AND 12/31/40 MITCHELL RETIREMENT
Base with Carbon Commodity Pricing

	Utility Costs (Nominal \$000)										(10) - Sum of Column 9 Figure 1 Support - Cumulative Difference	NPV (7.07%)
	(1) Load Cost - 100% Purchased at PJM Market Energy Price	(2) Fuel Costs - New and Existing Resources	(3) Emission Costs - New and Existing Resources	(4) Mitchell Fixed O&M and Ongoing Capital Recovery	(5) Variable O&M (New and existing) + Fixed O&M and PPA Costs - New Resources	(6) Levelized Return, Taxes, and Depreciation - New Owned Resources	(7) Marginal Losses / Contracts	(8) Less: Market Revenue - 100% of Generation sold at PJM Market Energy Price	(9) = (4) - (7) - (8) GRAND TOTAL, Net Utility Costs	(10) - Sum of Column 9 Figure 1 Support - Cumulative Difference		
2021	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	110	103
2022	0	0	0	110	0	0	0	0	110	0	1,351	1,185
2023	0	0	0	(207)	0	1,719	0	271	(3,536)	0	(2,185)	(1,696)
2024	0	0	0	(4,671)	0	1,663	0	528	(4,380)	0	(6,566)	(5,029)
2025	0	0	0	(5,541)	0	2,005	0	844	(7,303)	0	(13,869)	(10,219)
2026	0	0	0	(6,518)	0	0	0	785	(8,094)	0	(21,964)	(15,592)
2027	0	0	0	(7,387)	0	0	0	708	(8,708)	0	(30,671)	(20,990)
2028	0	12,607	2,760	(8,515)	0	487	0	680	(8,708)	0	(20,990)	(20,990)
2029	0	(20,878)	(19,188)	(9,553)	18,328	54,240	0	23,165	55,217	0	24,546	10,980
2030	0	(9,532)	(10,657)	(36,547)	15,707	54,460	0	(38,386)	31,939	0	56,485	28,251
2031	0	(4,351)	(5,822)	(37,740)	17,045	53,582	0	(17,182)	29,880	0	86,365	43,341
2032	0	(2,165)	(3,300)	(43,335)	21,504	66,517	0	6,562	27,952	0	114,317	56,525
2033	0	1,453	(5,900)	(50,493)	21,767	66,517	0	9,788	22,538	0	136,855	66,454
2034	0	769	(658)	(53,519)	22,186	66,517	0	16,721	19,327	0	156,182	74,406
2035	0	2,239	547	(55,705)	22,765	66,517	0	16,823	18,267	0	193,190	88,165
2036	0	1,271	311	(56,978)	23,262	67,267	0	16,290	17,043	0	211,234	94,213
2037	0	1,190	290	(57,779)	23,589	67,435	0	16,455	18,033	0	228,969	99,765
2038	0	(4,668)	(831)	(58,313)	23,939	66,261	0	14,216	16,137	0	245,106	104,484
2039	0	594	146	(58,549)	24,327	67,504	0	16,159	17,744	0	262,850	109,330
2040	0	0	0	(58,667)	269	(17,615)	0	474	(76,729)	0	186,121	89,759
2041	0	0	0	(28,456)	0	(18,727)	0	(85)	(47,148)	0	138,974	78,528
2042	0	0	0	(22,413)	0	(18,727)	0	(20)	(41,121)	0	97,853	69,379
2043	0	0	0	(16,104)	0	(18,727)	0	(8)	(34,823)	0	63,030	62,143
2044	0	0	0	(14,213)	0	(18,727)	0	(2)	(32,938)	0	30,093	55,750
2045	0	0	0	(12,553)	0	(18,727)	0	0	(31,280)	0	(1,187)	50,080
2046	0	0	0	(11,357)	0	(18,727)	0	0	(30,084)	0	(31,271)	44,988
2047	0	0	0	(10,050)	0	(18,727)	0	0	(28,777)	0	(60,048)	40,438
2048	0	0	0	(8,770)	0	(18,727)	0	0	(27,497)	0	(87,545)	36,377
2049	0	0	0	(7,736)	0	(18,727)	0	0	(26,463)	0	(114,008)	32,727
2050	0	0	0	(6,503)	0	(18,727)	0	0	(25,230)	0	(139,237)	29,477
Net Present Value \$000 (2021\$)	0	0	0	(22,913)	0	4,681	0	2,757	(20,990)	0	(20,990)	
Utility NPV 2021-2027	0	0	0	(221,681)	102,165	306,866	0	29,075	130,319	0	130,319	
Utility NPV 2028-2039	0	(9,290)	(18,667)	(41,882)	69	(37,933)	0	106	(79,852)	0	(79,852)	
Utility NPV 2040-2050	0	0	(0)						(35,915)		(35,915)	
NPV of End Effects beyond 2050									(6,438)		(6,438)	
TOTAL Utility Cost, Net NPV (2021\$)												

Net Present Value \$000 (2021\$)
 Utility NPV 2021-2027
 Utility NPV 2028-2039
 Utility NPV 2040-2050
 NPV of End Effects beyond 2050
 TOTAL Utility Cost, Net NPV (2021\$)

**KENTUCKY POWER COMPANY - CASE 1 CCR & ELG
2020 KP CCR /ELG ANALYSIS PLAN ASSUMING 12/31/2040 MITCHELL RETIREMENT OPTIMAL PLAN
Base No Carbon Commodity Pricing**

	Utility Costs (Nominal\$000)									
	(1) Load Cost - 100% of Load Purchased at PJM Market Energy Price	(2) Fuel Costs - New and Existing Resources	(3) Emission Costs - New and Existing Resources	(4) Mitchell Fixed O&M and Ongoing Capital Recovery	(5) Variable O&M (new and existing) + Fixed O&M and PPA Costs - New Resources	(6) Levelized Return, Taxes, and Depreciation - New Owned Resources	(7) Marginal Losses / Contracts	(8) Less: Market Energy Revenue - 100% of Generation sold at PJM Market Energy Price	(9)=(1)thru(7)-(8) GRAND TOTAL, Net Utility Costs	NPV (7.07%)
2021	\$000 133,999	\$000 33,606	\$000 2,118	\$000 37,416	\$000 20,967	\$000 0	\$000 (2,496)	\$000 41,259	\$000 184,350	\$172,178
2022	142,032	49,926	3,843	53,988	22,298	4,860	(2,648)	63,099	211,199	\$356,406
2023	150,413	54,300	3,891	50,097	8,342	6,877	(2,809)	75,865	195,246	\$515,472
2024	159,225	65,400	5,436	51,711	6,641	8,327	(2,979)	96,121	197,640	\$665,857
2025	164,055	60,861	5,361	56,012	6,221	1,812	(3,062)	89,068	202,192	\$809,546
2026	170,432	74,469	7,148	56,335	7,565	1,737	(3,178)	106,328	208,180	\$947,722
2027	178,464	72,480	6,881	57,927	7,511	850	(3,328)	103,742	217,042	\$1,082,267
2028	185,133	81,326	7,790	59,692	8,223	836	(3,454)	115,206	224,340	\$1,212,154
2029	186,160	75,011	6,938	61,573	7,748	821	(3,471)	103,119	231,661	\$1,337,423
2030	186,913	61,223	5,383	63,777	6,761	682	(3,489)	83,930	237,319	\$1,457,278
2031	182,448	25,800	2,408	57,502	29,609	682	(3,399)	34,780	260,269	\$1,580,043
2032	183,320	18,536	1,669	58,684	29,610	682	(3,410)	24,668	264,422	\$1,696,532
2033	188,489	10,911	931	59,867	29,789	682	(3,504)	14,462	272,702	\$1,808,735
2034	193,301	14,423	1,245	61,049	30,940	682	(3,592)	18,499	279,550	\$1,916,162
2035	197,417	11,197	947	61,640	31,266	682	(3,670)	14,337	285,142	\$2,018,502
2036	200,338	9,305	784	62,113	32,111	682	(3,725)	12,064	289,543	\$2,115,559
2037	207,770	16,121	1,359	62,468	33,125	682	(3,864)	20,148	297,512	\$2,208,702
2038	215,600	21,959	1,858	62,704	34,479	682	(4,010)	27,512	305,759	\$2,298,107
2039	218,083	19,252	1,615	62,822	34,452	13,879	(4,056)	36,160	309,888	\$2,382,735
2040	223,779	28,912	2,245	62,478	60,906	98,997	(4,162)	61,015	412,140	\$2,487,856
2041	228,324	3,922	0	31,821	60,144	98,997	(4,250)	31,996	386,962	\$2,580,037
2042	233,241	2,418	0	25,238	61,269	98,997	(4,341)	30,699	386,125	\$2,665,946
2043	238,247	2,250	0	18,675	62,643	98,997	(4,435)	31,277	385,101	\$2,745,969
2044	242,630	1,230	0	16,574	63,660	98,997	(4,511)	30,717	387,863	\$2,821,244
2045	250,659	1,684	0	14,422	65,031	98,997	(4,662)	32,451	393,681	\$2,892,603
2046	259,069	2,184	0	12,831	66,583	98,997	(4,828)	34,182	400,654	\$2,960,431
2047	266,627	1,030	0	11,120	67,318	111,911	(4,965)	48,983	404,058	\$3,024,318
2048	276,034	1,779	0	9,432	69,106	111,911	(5,145)	51,740	411,377	\$3,085,067
2049	283,733	1,373	0	7,978	69,804	111,911	(5,285)	52,871	416,642	\$3,142,531
2050	291,144	1,392	0	6,744	63,161	111,911	(5,421)	52,943	415,988	\$3,196,117
Net Present Value \$000 (2021\$)	833,079	306,547	25,457	275,306	64,980	19,145	(15,545)	426,702	1,082,267	
Utility NPV 2021-2027	946,559	172,797	15,725	299,125	115,369	7,114	(17,622)	238,598	1,300,468	
Utility NPV 2040-2050	508,808	11,022	573	46,135	130,538	209,419	(9,471)	83,642	813,381	
NPV of End Effects beyond 2050									747,805	
TOTAL Utility Cost, Net NPV (2021\$)									3,943,921	

KENTUCKY POWER COMPANY - CASE 2 CCR ONLY
2020 KP CCR/ELG ANALYSIS PLAN ASSUMING 12/31/28 MITCHELL RETIREMENT OPTIMAL PLAN
Base No Carbon Commodity Pricing

	Utility Costs (Nominal \$000)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Load	Fuel Costs -	Emission	Mitchell Fixed	Variable O&M (new	Levelized Return,	Marginal Losses /	Less:	(9)-(1) thru (7) -(8)	NPV	
	Cost - 100% of	Existing	Costs - New	O&M and	and existing)	Taxes, and	Contracts	Market Energy	GRAND TOTAL,	(7.07%)	
	Load Purchased	Resources	Resources	Ongoing	+ Fixed O&M and	Depreciation - New		Revenue - 100% of	Net Utility		
	at PJM Market	Recovery	Capital	Capital	PPA Costs - New	Owened Resources		Generation sold at	Costs		
	Energy Price				Resources			PJM Market			
								Energy Price			
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000		
2021	133,999	33,606	2,118	37,526	20,967	0	(2,496)	41,259	184,461	\$172,280	
2022	142,032	49,926	3,843	53,781	22,298	5,037	(2,648)	63,125	211,144	\$356,460	
2023	150,413	54,300	3,891	45,426	8,342	6,704	(2,809)	75,865	190,402	\$511,580	
2024	159,225	65,400	5,436	46,170	6,641	8,327	(2,979)	96,121	192,098	\$657,748	
2025	164,055	60,861	5,361	49,494	6,221	1,812	(3,062)	89,069	195,673	\$796,805	
2026	170,432	74,469	7,148	48,948	7,565	1,737	(3,178)	106,328	200,793	\$930,078	
2027	178,464	72,480	6,881	49,412	7,511	850	(3,328)	103,742	208,527	\$1,059,345	
2028	185,133	89,932	7,790	50,139	29,417	54,505	(3,454)	128,751	284,709	\$1,224,184	
2029	186,160	14,891	0	25,026	23,702	54,471	(3,479)	24,302	276,477	\$1,373,686	
2030	186,913	14,392	0	26,037	24,192	67,407	(3,489)	34,063	281,390	\$1,515,798	
2031	182,448	5,357	0	14,167	49,226	80,323	(3,399)	30,597	297,525	\$1,656,137	
2032	183,320	3,848	0	8,191	49,943	80,135	(3,410)	27,844	294,182	\$1,785,736	
2033	188,489	3,473	0	6,347	50,946	80,135	(3,504)	27,456	298,430	\$1,908,526	
2034	193,301	2,664	0	5,344	52,038	80,135	(3,592)	26,417	303,475	\$2,025,146	
2035	197,417	2,364	0	4,662	52,937	80,135	(3,670)	26,362	307,483	\$2,135,504	
2036	200,338	2,001	0	4,334	54,284	80,135	(3,725)	26,114	311,253	\$2,239,839	
2037	207,770	1,694	0	4,155	55,066	80,135	(3,864)	26,687	318,267	\$2,339,480	
2038	215,600	3,114	0	4,155	56,654	80,135	(4,010)	29,599	326,049	\$2,434,817	
2039	218,083	1,378	0	4,155	57,316	80,441	(4,056)	27,630	329,687	\$2,524,853	
2040	223,779	2,603	0	3,570	59,026	80,441	(4,162)	29,888	335,369	\$2,610,392	
2041	228,324	3,922	0	3,365	60,144	80,441	(4,250)	31,996	339,949	\$2,691,374	
2042	233,241	2,418	0	2,825	61,269	80,441	(4,341)	30,699	345,155	\$2,768,167	
2043	238,247	2,250	0	2,571	62,643	80,441	(4,435)	31,277	350,440	\$2,840,988	
2044	242,630	1,230	0	2,362	63,660	80,441	(4,511)	30,717	355,094	\$2,909,903	
2045	250,659	1,684	0	1,869	65,031	80,441	(4,662)	32,451	362,572	\$2,975,624	
2046	259,069	2,184	0	1,474	66,583	80,441	(4,828)	34,182	370,740	\$3,038,387	
2047	266,627	1,030	0	1,071	67,318	93,354	(4,965)	48,983	375,452	\$3,097,751	
2048	276,034	1,779	0	662	69,106	93,354	(5,145)	51,740	384,050	\$3,154,465	
2049	283,733	1,373	0	242	69,804	93,354	(5,285)	52,871	390,350	\$3,208,303	
2050	291,144	1,392	0	242	63,161	93,354	(5,421)	52,943	390,929	\$3,258,660	
Net Present Value \$000 (2021\$)											
Utility NPV 2021-2027											1,059,345
Utility NPV 2028-2039											1,465,508
Utility NPV 2040-2050											733,808
NPV of End Effects beyond 2050											
TOTAL Utility Cost, Net NPV (2021\$)											<u>712,200</u>
											3,970,860

KENTUCKY POWER COMPANY - CASE 2 MINUS CASE 1
2020 KPCCO CCR/ELG PLAN DIFFERENCE BETWEEN 12/31/28 MITCHELL RETIREMENT AND 12/31/40 MITCHELL RETIREMENT
Base without Carbon Commodity Pricing

	Utility Costs (Nominal)\$000								(10) - Sum of Column 9 Figure 1 Support - Cumulative Difference	NPV (7.07%)	
	(1) Load Cost - 100% Purchased at PJM Market Energy Price	(2) Fuel Costs - New and Existing Resources	(3) Emission Costs - New and Existing Resources	(4) Mitchell Fixed O&M and Ongoing Capital Recovery	(5) Variable O&M (New and Existing) + Fixed O&M and PPA Costs - New Resources	(6) Levelized Return, Taxes, and Depreciation - New Owned Resources	(7) Marginal Losses / Contracts	(8) Less: Market Revenue - 100% of Generation sold at PJM Market Energy Price			(9)=(7)-(8) GRAND TOTAL, Net Utility Costs
2021	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	110	103
2022	0	0	0	110	0	0	0	0	110	55	55
2023	0	0	0	(207)	0	177	0	25	(55)	(4,789)	(3,892)
2024	0	0	0	(4,671)	0	(173)	0	0	(4,844)	(10,331)	(8,108)
2025	0	0	0	(5,541)	0	0	0	0	(5,542)	(16,850)	(12,741)
2026	0	0	0	(6,518)	0	0	0	0	(6,519)	(24,236)	(17,644)
2027	0	0	0	(7,387)	0	0	0	0	(7,387)	(32,751)	(22,922)
2028	0	0	0	(8,515)	0	0	0	0	(8,515)	60,369	12,029
2029	0	8,606	0	(9,553)	21,193	53,669	0	13,546	60,369	44,816	36,263
2030	0	(60,120)	(6,938)	(36,547)	15,954	53,651	0	(78,817)	44,816	72,433	58,520
2031	0	(46,830)	(5,383)	(37,740)	17,431	66,725	0	(49,867)	44,070	116,503	76,094
2032	0	(20,442)	(2,408)	(43,335)	19,617	79,641	0	(4,182)	37,256	153,760	89,204
2033	0	(14,687)	(1,669)	(50,493)	20,333	79,453	0	3,176	29,761	209,249	108,984
2034	0	(7,438)	(931)	(53,519)	21,157	79,453	0	12,994	25,728	233,173	117,002
2035	0	(11,759)	(1,245)	(55,705)	21,098	79,453	0	7,918	23,924	255,514	124,280
2036	0	(8,833)	(947)	(56,978)	21,671	79,453	0	14,049	22,341	277,224	130,778
2037	0	(7,304)	(784)	(57,779)	22,173	79,453	0	6,540	21,710	318,269	142,117
2038	0	(14,427)	(1,359)	(58,313)	21,941	79,453	0	2,087	20,290	338,068	122,536
2039	0	(18,845)	(1,858)	(58,549)	22,175	79,453	0	(8,530)	19,799	261,297	111,337
2040	0	(17,874)	(1,615)	(58,667)	22,864	66,562	0	(31,128)	(47,012)	102,222	95,019
2041	0	(26,309)	(2,245)	(58,909)	(1,880)	(18,556)	0	0	(34,661)	105,885	88,659
2042	0	0	0	(28,456)	0	(18,556)	0	0	(31,110)	74,776	83,021
2043	0	0	0	(22,413)	0	(18,556)	0	0	(29,913)	44,862	77,956
2044	0	0	0	(16,104)	0	(18,556)	0	0	(28,606)	16,256	73,433
2045	0	0	0	(14,213)	0	(18,556)	0	0	(27,326)	69,398	65,772
2046	0	0	0	(12,553)	0	(18,556)	0	0	(26,292)	(37,363)	62,544
2047	0	0	0	(11,357)	0	(18,556)	0	0	(25,059)	(22,922)	
2048	0	0	0	(10,050)	0	(18,556)	0	0	165,040		
2049	0	0	0	(8,770)	0	(18,556)	0	0	(79,574)		
2050	0	0	0	(7,736)	0	(18,556)	0	0	(35,605)		
				(6,503)	0	(18,556)	0	0	26,939		
				(22,913)	0	14	0	23	(22,922)		
				(221,681)	99,532	351,008	0	(42,792)	165,040		
				(41,882)	(479)	(37,869)	0	(7,939)	(79,574)		
Net Present Value \$000 (2021\$)											
Utility NPV 2021-2027	0	0	0	(22,913)	0	14	0	23	(22,922)		
Utility NPV 2028-2039	0	(95,397)	(11,215)	(221,681)	99,532	351,008	0	(42,792)	165,040		
Utility NPV 2040-2050	0	(6,710)	(573)	(41,882)	(479)	(37,869)	0	(7,939)	(79,574)		
NPV of End Effects beyond 2050											
TOTAL Utility Cost, Net NPV (2021\$)											

KENTUCKY POWER COMPANY - CASE 1 CCR & ELG
2020 KP CCR /ELG ANALYSIS PLAN ASSUMING 12/31/2040 MITCHELL RETIREMENT OPTIMAL PLAN
Low Band No Carbon Commodity Pricing

Utility Costs (Nominal \$000)									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(1) thru (7) - (8)	NPV (7.07%)
Load Cost - 100% of Load Purchased at PJM Market Energy Price	Fuel Costs - New and Existing Resources	Emission Costs - New and Existing Resources	Mitchell Fixed O&M and Ongoing Capital Recovery	Variable O&M (new and existing) + Fixed O&M and PPA Costs - New Resources	Levelized Return, Taxes, and Depreciation - New Owned Resources	Marginal Losses / Contracts	Less: Market Energy Revenue - 100% of Generation sold at PJM Market Energy Price	GRAND TOTAL, Net Utility Costs	
\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
2021	118,377	1,115	37,416	20,465	0	(2,203)	28,463	169,207	\$158,034
2022	120,583	1,992	53,988	20,929	5,037	(2,247)	38,227	190,531	\$324,233
2023	123,860	2,180	50,097	5,139	6,716	(2,311)	46,048	170,940	\$463,498
2024	130,692	2,812	51,711	3,950	8,327	(2,444)	57,059	173,982	\$595,881
2025	136,809	3,023	56,012	3,982	1,812	(2,557)	58,028	178,176	\$722,504
2026	141,210	3,713	56,335	4,361	1,737	(2,636)	62,641	183,953	\$844,599
2027	147,723	3,540	57,927	4,400	850	(2,757)	60,771	191,090	\$963,057
2028	152,075	3,661	59,692	4,481	836	(2,838)	60,953	198,215	\$1,187,808
2029	152,181	2,776	61,573	4,259	821	(2,842)	48,636	203,406	\$1,293,412
2030	153,417	2,668	63,777	4,531	682	(2,862)	46,584	209,102	\$1,401,666
2031	154,670	974	57,502	25,899	682	(2,889)	17,916	229,503	\$1,503,666
2032	151,566	635	58,684	27,984	682	(2,822)	12,301	231,534	\$1,602,892
2033	156,543	323	59,867	29,281	682	(2,913)	6,452	241,160	\$1,696,879
2034	157,167	131	61,049	30,014	682	(2,920)	3,049	244,578	\$1,786,023
2035	159,653	77	61,640	30,543	682	(2,966)	2,147	248,377	\$1,870,684
2036	162,470	0	62,113	31,460	682	(3,020)	1,142	252,562	\$1,951,857
2037	168,344	224	62,468	32,174	682	(3,131)	4,182	259,278	\$2,029,525
2038	173,880	184	62,704	33,078	682	(3,231)	3,878	265,621	\$2,103,586
2039	176,493	134	62,822	33,218	13,879	(3,282)	13,701	271,190	\$2,199,410
2040	182,985	205	62,478	59,700	98,997	(3,402)	32,126	375,693	\$2,282,158
2041	184,406	0	31,821	60,497	98,997	(3,428)	29,777	347,360	\$2,359,094
2042	188,654	0	25,238	61,711	98,997	(3,510)	29,322	345,798	\$2,430,644
2043	193,195	0	18,675	63,310	98,997	(3,593)	31,278	344,323	\$2,498,072
2044	198,430	0	16,574	64,388	98,997	(3,692)	31,729	347,430	\$2,562,001
2045	207,368	0	14,422	66,040	98,997	(3,862)	36,547	352,692	\$2,622,381
2046	211,850	0	12,831	67,497	98,997	(3,945)	36,829	360,956	\$2,679,453
2047	218,618	0	11,120	68,222	111,911	(4,071)	50,301	360,956	\$2,733,467
2048	225,299	0	9,432	69,778	111,911	(4,204)	51,295	365,762	\$2,784,465
2049	231,075	0	7,978	70,716	111,911	(4,307)	53,602	369,762	\$2,831,679
2050	236,183	0	6,744	63,782	111,911	(4,406)	52,172	366,523	
Net Present Value \$000 (2021\$)									
Utility NPV 2021-2027	698,621	13,502	275,306	53,015	19,168	(13,036)	261,347	963,057	
Utility NPV 2028-2039	775,861	6,079	299,125	105,637	7,114	(14,450)	110,150	1,140,529	
Utility NPV 2040-2050	414,814	52	46,135	131,478	209,419	(7,722)	76,970	728,093	
NPV of End Effects beyond 2050								557,680	
TOTAL Utility Cost, Net NPV (2021\$)								3,489,358	

KENTUCKY POWER COMPANY - CASE 2 CCR ONLY
2020 KP CCRIELG ANALYSIS PLAN ASSUMING 12/31/28 MITCHELL RETIREMENT OPTIMAL PLAN
Low Band No Carbon Commodity Pricing

	Utility Costs (Nominal \$000)										(9)=(1) thru (7) (8)	NPV (7.07%)
	(1) Load Cost - 100% of Load Purchased at PJM Market Energy Price	(2) Fuel Costs - New and Existing Resources	(3) Emission Costs - New and Existing Resources	(4) Mitchell Fixed O&M and Ongoing Capital Recovery	(5) Variable O&M (new and existing) + Fixed O&M and PPA Costs - New Resources	(6) Levelized Return, Taxes, and Depreciation - New Owned Resources	(7) Marginal Losses / Contracts	(8) Less: Market Energy Revenue - 100% of Generation sold at PJM Market Energy Price	(9)=(1) thru (7) (8) GRAND TOTAL, Net Utility Costs	NPV (7.07%)		
2021	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$158,136		
2022	118,377	22,500	1,115	37,526	20,465	0	28,463	169,317	\$323,948			
2023	120,583	28,475	1,992	53,781	20,929	4,777	38,205	190,086	\$459,539			
2024	123,860	31,308	2,180	45,426	5,139	6,877	46,048	166,431	\$587,707			
2025	130,692	35,992	2,812	46,170	3,950	8,327	57,057	168,442	\$709,522			
2026	136,809	37,123	3,023	49,494	3,982	1,537	58,000	171,411	\$826,888			
2027	141,210	41,873	3,713	48,948	4,361	1,993	62,636	176,827	\$940,072			
2028	147,723	40,178	3,540	49,412	4,400	850	60,763	182,583	\$1,086,252			
2029	152,075	49,294	3,661	50,139	21,129	54,418	75,396	252,482	\$1,214,750			
2030	152,181	13,048	0	25,026	19,880	54,403	24,061	237,634	\$1,339,559			
2031	153,417	13,270	0	26,037	22,256	67,711	32,700	247,129	\$1,465,010			
2032	154,670	5,580	0	14,167	46,157	80,323	32,048	265,962	\$1,580,748			
2033	151,566	3,708	0	8,191	49,059	80,135	27,119	262,719	\$1,691,011			
2034	156,543	3,960	0	6,347	51,214	80,135	27,303	267,985	\$1,795,143			
2035	157,167	3,346	0	5,344	52,311	80,135	24,407	270,977	\$1,893,338			
2036	159,653	2,798	0	4,662	53,140	80,135	23,826	273,596	\$1,986,247			
2037	162,470	2,600	0	4,334	54,508	80,135	23,860	277,167	\$2,074,806			
2038	168,344	2,691	0	4,155	55,362	80,135	24,689	282,867	\$2,159,181			
2039	173,880	3,350	0	4,155	56,829	80,135	26,559	288,559	\$2,238,993			
2040	176,493	2,152	0	4,155	57,543	80,441	25,250	292,252	\$2,315,092			
2041	182,985	4,406	0	3,570	59,529	80,441	29,172	298,356	\$2,386,640			
2042	184,406	4,843	0	3,365	60,497	80,441	29,781	300,344	\$2,454,460			
2043	188,654	4,028	0	2,825	61,711	80,441	29,324	304,826	\$2,518,807			
2044	193,195	5,018	0	2,571	63,310	80,441	31,279	309,662	\$2,579,875			
2045	198,430	4,461	0	2,362	64,388	80,441	31,729	314,661	\$2,638,166			
2046	207,368	6,273	0	1,869	66,040	80,441	36,547	321,582	\$2,693,482			
2047	211,850	6,261	0	1,474	67,497	80,441	36,829	326,748	\$2,746,031			
2048	218,618	5,457	0	1,071	68,222	93,354	50,301	332,349	\$2,796,008			
2049	225,299	4,843	0	662	69,778	93,354	51,295	338,436	\$2,843,381			
2050	231,075	5,992	0	242	70,716	93,354	53,602	343,470	\$2,887,366			
2050	236,183	4,480	0	242	63,782	93,354	52,172	341,464				
2050	698,621	177,827	13,502	252,393	53,015	19,048	261,299	940,072				
2050	775,861	53,764	2,119	77,445	205,790	358,187	159,795	1,298,921				
2050	414,814	10,261	0	4,253	131,435	171,550	76,218	648,373				
								622,075				
								3,509,441				

Net Present Value \$000 (2021\$)
Utility NPV 2021-2027
Utility NPV 2028-2039
Utility NPV 2040-2050
NPV of End Effects beyond 2050
TOTAL Utility Cost, Net NPV (2021\$)

2020 KP Mitchell CCR/ELG Analysis - Case 1 CCR and ELG
EIA_Base with Carbon Commodity Pricing
KP Optimization Expansion Plan (Supply-side, Renewables, VVO, DR, EE) for Mitchell 1&2 CCR Expenditures Only (12/31/40 Retirement)

Year	Planning Peak Load (MW)	Firm Generation Capacity		237 MW CT-Frame	Commercial DSM Firm Capacity (MW)		Residential DSM Firm Capacity (MW)		Distributed Capacity (MW)		Utility Firm Capacity (MW)	CVR Firm Capacity (MW)	Wind Firm Capacity (MW)	Short Term PPA Capacity (MW)	Firm Generation Capacity with New Additions (MW)	Capacity Reserves Above Required Generation		Reserve Margin without New Capacity Additions (%)	Reserve Margin with New Capacity Additions (%)	Nameplate Solar	Nameplate Wind	Testimony Figure 2 Capacity Reserves Above Required Generation with New Capacity Additions (MW) except for Mitchell
		Required Generation Capacity (MW)	Capacity without New Additions (MW)		DSM Firm Capacity (MW)	DSM Firm Capacity (MW)	Solar Firm Capacity (MW)	Residential DSM Firm Capacity (MW)	Solar Firm Capacity (MW)	Capacity Reserves Above Required Generation (MW)						Capacity Reserves Above Required Generation with New Capacity Additions (MW)						
2021	955	1,038	1,333	0	0	0	0	0	0.00	0	0	0	0	0	1,333	295	39.51	39.5	0	0	295	
2022	978	1,062	1,344	0	3	1	1	0	0.00	0	0	0	0	0	1,347	285	37.36	37.7	0	0	285	
2023	993	1,078	969	0	6	1	1	1	1.02	0	24	0	100	1,102	(109)	(2.39)	11.0	0	200	24		
2024	919	998	969	0	8	2	2	2	1.53	0	24	0	0	1,004	(29)	5.39	9.3	0	200	6		
2025	917	996	969	0	7	2	2	2	1.53	0	48	0	0	1,028	(27)	5.63	12.0	0	400	31		
2026	916	995	969	0	7	2	2	2	1.53	0	48	0	0	1,027	(26)	5.75	12.1	0	400	32		
2027	914	992	969	0	6	2	2	2	2.04	0	48	0	0	1,026	(23)	6.06	12.3	0	400	34		
2028	909	987	969	0	5	1	1	2	2.04	0	48	0	0	1,025	(18)	6.59	12.8	0	400	38		
2029	909	987	969	0	4	1	1	2	2.56	0	48	0	0	1,025	(18)	6.61	12.7	0	400	38		
2030	906	984	969	0	3	1	1	3	3.07	0	48	0	0	1,024	(15)	6.90	13.0	0	400	40		
2031	904	982	678	0	2	1	1	3	3.58	0	48	0	250	983	(304)	(25.04)	8.6	0	400	0		
2032	900	978	678	0	2	0	0	3	3.58	0	48	0	250	982	(300)	(24.71)	9.0	0	400	4		
2033	901	978	678	0	1	0	0	4	4.09	0	48	0	250	981	(300)	(24.75)	8.9	0	400	3		
2034	899	976	678	0	1	0	0	4	4.60	0	48	0	250	981	(298)	(24.59)	9.2	0	400	5		
2035	898	975	678	0	0	0	0	4	4.60	0	48	0	250	981	(297)	(24.49)	9.3	0	400	6		
2036	895	972	678	0	0	0	0	5	5.11	41	48	0	200	972	(294)	(24.24)	8.6	150	400	0		
2037	895	972	678	0	0	0	0	5	5.11	41	48	4	200	976	(294)	(24.28)	9.0	150	400	4		
2038	894	971	678	0	0	1	1	5	5.62	81	48	8	150	971	(293)	(24.19)	8.6	300	400	0		
2039	893	970	678	0	0	1	1	5	5.62	81	48	8	150	971	(292)	(24.11)	8.7	300	400	1		
2040	890	966	10	476	0	0	0	6	6.13	122	48	8	300	970	(956)	(98.85)	9.0	450	400	-664		
2041	891	967	10	476	0	0	0	6	6.13	122	48	10	300	972	(957)	(98.85)	9.2	450	400	-663		
2042	889	966	0	476	0	0	0	6	6.64	122	48	10	350	1,013	(966)	(100.00)	13.8	450	400	-621		
2043	888	965	0	476	0	0	0	7	7.15	122	48	10	350	1,013	(965)	(100.00)	14.0	450	400	-620		
2044	885	961	0	476	0	0	0	7	7.15	122	48	10	300	963	(961)	(100.00)	8.8	450	400	-666		
2045	886	962	0	476	0	0	0	7	7.67	122	48	10	300	963	(962)	(100.00)	8.7	450	400	-667		
2046	885	961	0	476	0	0	0	8	8.18	122	48	10	300	964	(961)	(100.00)	8.9	450	400	-665		
2047	884	960	0	476	0	0	0	8	8.69	122	48	10	300	965	(960)	(100.00)	9.1	450	400	-663		
2048	881	956	0	476	0	0	0	9	9.20	122	48	10	300	965	(956)	(100.00)	9.6	450	400	-659		
2049	882	958	0	476	0	0	0	9	9.20	122	48	10	300	965	(958)	(100.00)	9.5	450	400	-660		
2050	881	956	0	476	0	0	0	9	9.20	122	48	10	300	965	(956)	(100.00)	9.6	450	400	-659		

2020 KP Mitchell CCR/ELG Analysis - Case 2 CCR Only
EIA_Base with Carbon Commodity Pricing

KP Optimization Expansion Plan (Supply-side, Renewables, VVO, DR, EE) for Mitchell 1&2 CCR Expenditures Only (12/31/28 Retirement)

Planning Peak Load (MW)	Required Generation Capacity (MW)		Firm Generation Capacity (MW)		Firm Capacity (MW)		Utility Firm Capacity (MW)		CVR Firm Capacity (MW)		Wind Firm Capacity (MW)		Short Term PPA Capacity (MW)		Firm Generation Capacity with New Additions (MW)		Capacity Reserves Above Required Generation without New Additions (MW)		Reserve Margin without New Capacity Additions (%)		Reserve Margin with New Capacity Additions (%)		Nameplate Solar		Nameplate Wind		Capacity Reserves Above Required Generation with New Capacity Additions (MW)	Testimony Figure 2 - Capacity Reserves Above Required Generation with New Capacity Additions (MW) except for Mitchell		
	955	1,038	1,333	1,344	0	0	0	0	0	0	0	0	0	0	0	1,333	1,349	296	281	39.54	37.36	39.5	38.0	0	0	0			0	296
2021	955	1,038	1,333	1,344	0	0	0	0	0	0	0	0	0	0	1,333	1,349	296	281	39.54	37.36	39.5	38.0	0	0	0	0	296	287	296	287
2022	978	1,062	1,344	1,344	0	5	1	0	0	0	0	0	0	0	1,349	1,349	281	281	37.36	37.36	38.0	38.0	0	0	0	0	287	287	287	287
2023	993	1,078	969	969	0	9	2	1.02	0	0	0	24	100	100	1,105	1,105	(109)	(109)	(2.39)	(2.39)	11.4	11.4	0	0	200	200	27	27	27	27
2024	919	998	969	969	0	14	3	1.53	0	0	24	24	0	0	1,011	1,011	(29)	(29)	5.39	5.39	9.9	9.9	0	0	200	200	12	12	12	12
2025	917	996	969	969	0	12	2	1.53	0	0	48	48	0	0	1,033	1,033	(27)	(27)	5.63	5.63	12.6	12.6	0	0	400	400	37	37	37	37
2026	916	995	969	969	0	11	2	1.53	0	0	48	48	0	0	1,031	1,031	(26)	(26)	5.75	5.75	12.6	12.6	0	0	400	400	36	36	36	36
2027	914	992	969	969	0	10	2	2.04	0	0	48	48	0	0	1,031	1,031	(23)	(23)	6.06	6.06	12.8	12.8	0	0	400	400	39	39	39	39
2028	909	987	301	301	476	8	3	2.04	0	0	48	48	150	150	988	988	(686)	(686)	(66.86)	(66.86)	8.7	8.7	0	0	400	400	1	1	-667	-667
2029	909	987	301	301	476	7	3	2.56	0	0	48	48	150	150	987	987	(686)	(686)	(66.86)	(66.86)	8.6	8.6	0	0	400	400	0	0	-668	-668
2030	906	984	301	301	476	5	2	3.07	0	0	48	48	150	150	986	986	(683)	(683)	(66.77)	(66.77)	8.8	8.8	0	0	400	400	1	1	-666	-666
2031	904	982	10	10	476	4	2	3.58	41	0	48	48	400	400	984	984	(972)	(972)	(98.87)	(98.87)	8.8	8.8	150	150	2	2	-666	-666		
2032	900	978	10	10	476	3	1	3.58	41	0	48	48	400	400	982	982	(968)	(968)	(98.86)	(98.86)	9.1	9.1	150	150	4	4	-663	-663		
2033	901	978	10	10	476	2	1	4.09	41	0	48	48	400	400	981	981	(968)	(968)	(98.87)	(98.87)	8.9	8.9	150	150	3	3	-665	-665		
2034	899	976	10	10	476	1	0	4.60	41	0	48	48	400	400	981	981	(966)	(966)	(98.86)	(98.86)	9.1	9.1	150	150	5	5	-663	-663		
2035	898	975	10	10	476	0	0	4.60	41	0	48	48	400	400	980	980	(965)	(965)	(98.86)	(98.86)	9.2	9.2	150	150	5	5	-663	-663		
2036	895	972	10	10	476	0	0	5.11	81	4	48	48	350	350	975	975	(962)	(962)	(98.86)	(98.86)	9.0	9.0	300	300	3	3	-664	-664		
2037	895	972	10	10	476	0	0	5.11	81	8	48	48	350	350	978	978	(962)	(962)	(98.86)	(98.86)	9.2	9.2	300	300	6	6	-662	-662		
2038	894	971	10	10	476	0	0	5.62	122	10	48	48	300	300	972	972	(961)	(961)	(98.86)	(98.86)	8.7	8.7	450	450	1	1	-667	-667		
2039	893	970	10	10	476	0	0	5.62	122	10	48	48	300	300	972	972	(960)	(960)	(98.86)	(98.86)	8.8	8.8	450	450	2	2	-666	-666		
2040	890	966	10	10	476	0	0	6.13	122	10	48	48	300	300	972	972	(956)	(956)	(98.85)	(98.85)	9.3	9.3	450	450	6	6	-662	-662		
2041	891	967	10	10	476	0	0	6.13	122	10	48	48	300	300	972	972	(957)	(957)	(98.85)	(98.85)	9.2	9.2	450	450	5	5	-663	-663		
2042	889	966	0	0	476	0	0	6.64	122	10	48	48	350	350	1,012	1,012	(966)	(966)	(100.00)	(100.00)	13.8	13.8	450	450	47	47	-621	-621		
2043	888	965	0	0	476	0	0	7.15	122	10	48	48	350	350	1,013	1,013	(965)	(965)	(100.00)	(100.00)	14.0	14.0	450	450	48	48	-620	-620		
2044	885	961	0	0	476	0	0	7.15	122	10	48	48	300	300	963	963	(961)	(961)	(100.00)	(100.00)	8.8	8.8	450	450	2	2	-666	-666		
2045	886	962	0	0	476	0	0	7.67	122	10	48	48	300	300	963	963	(962)	(962)	(100.00)	(100.00)	8.7	8.7	450	450	1	1	-667	-667		
2046	885	961	0	0	476	0	0	8.18	122	10	48	48	300	300	964	964	(961)	(961)	(100.00)	(100.00)	8.9	8.9	450	450	3	3	-665	-665		
2047	884	960	0	0	476	0	0	8.69	122	10	48	48	300	300	965	965	(960)	(960)	(100.00)	(100.00)	9.1	9.1	450	450	5	5	-663	-663		
2048	881	956	0	0	476	0	0	9.20	122	10	48	48	300	300	965	965	(956)	(956)	(100.00)	(100.00)	9.6	9.6	450	450	9	9	-659	-659		
2049	882	958	0	0	476	0	0	9.20	122	10	48	48	300	300	965	965	(958)	(958)	(100.00)	(100.00)	9.5	9.5	450	450	7	7	-660	-660		
2050	881	956	0	0	476	0	0	9.20	122	10	48	48	300	300	965	965	(956)	(956)	(100.00)	(100.00)	9.6	9.6	450	450	9	9	-659	-659		

2020 KP Mitchell CCR/ELG Analysis - Case 1 CCR and ELG
EIA Base without Carbon Commodity Pricing
KP Optimization Expansion Plan (Supply-side, Renewables, VVO, DR, EE) for Mitchell 1&2 CCR Expenditures Only (12/31/40 Retirement)

Peak Load (MW)	Planning	Firm Generation		237 MW CT-Frame	Commercial DSM Firm Capacity (MW)	Residential DSM Firm Capacity (MW)	Distributed Solar Firm Capacity (MW)	Utility Solar Firm Capacity (MW)	CVR Firm Capacity (MW)	Wind Firm Capacity (MW)	Short Term PPA Capacity (MW)	Firm Generation Capacity with New Additions (MW)		Capacity Reserves Above Required Generation with New Capacity Additions (MW)	Reserve Margin with New Capacity Additions (%)	Nameplate Solar	Nameplate Wind
		Required Generation Capacity (MW)	Capacity without New Additions (MW)														
2021	955	1,038	1,333	0	0	0	0.00	0	0	0	0	1,333	295	295	39.51	0	0
2022	978	1,062	1,344	0	5	2	0.00	0	0	0	0	1,350	281	288	37.36	0	0
2023	993	1,078	969	0	9	6	1.02	0	0	0	100	1,085	(109)	7	(2.39)	0	0
2024	919	998	969	0	14	10	1.53	0	0	0	0	998	(29)	0	5.39	0	0
2025	917	996	969	0	12	10	1.53	0	0	0	0	997	(27)	1	5.63	0	0
2026	916	995	969	0	11	9	1.53	0	0	0	0	995	(26)	0	5.75	0	0
2027	914	992	969	0	10	8	2.04	0	0	0	0	993	(23)	0	6.06	0	0
2028	909	987	969	0	8	6	2.04	0	0	0	0	990	(18)	3	6.59	0	0
2029	909	987	969	0	7	5	2.56	0	0	0	0	987	(18)	0	6.61	0	0
2030	906	984	969	0	5	4	3.07	0	0	0	0	985	(15)	1	6.90	0	0
2031	904	982	678	0	4	3	3.58	0	0	0	300	992	(304)	10	(25.04)	0	0
2032	900	978	678	0	3	2	3.58	0	0	0	300	990	(300)	12	(24.71)	0	0
2033	901	978	678	0	2	1	4.09	0	0	0	300	989	(300)	11	(24.75)	0	0
2034	899	976	678	0	1	1	4.60	0	0	0	300	988	(298)	12	(24.59)	0	0
2035	898	975	678	0	0	0	4.60	0	0	0	300	988	(297)	13	(24.49)	0	0
2036	895	972	678	0	0	0	5.11	0	0	0	300	988	(294)	16	(24.24)	0	0
2037	895	972	678	0	0	0	5.11	0	0	0	300	987	(294)	15	(24.28)	0	0
2038	894	971	678	0	0	0	5.62	0	0	0	300	988	(293)	17	(24.19)	0	0
2039	893	970	678	0	0	0	5.62	41	4	0	250	978	(292)	8	(24.11)	150	0
2040	890	966	10	476	0	0	6.13	81	4	0	400	978	(956)	11	(98.85)	300	0
2041	891	967	10	476	0	0	6.13	81	4	0	400	978	(957)	10	(98.85)	300	0
2042	889	966	0	476	0	0	6.64	81	4	0	400	968	(966)	2	(100.00)	300	0
2043	888	965	0	476	0	0	7.15	81	4	0	400	968	(965)	4	(100.00)	300	0
2044	885	961	0	476	0	0	7.15	81	4	0	400	968	(961)	7	(100.00)	300	0
2045	886	962	0	476	0	0	7.67	81	4	0	400	969	(962)	6	(100.00)	300	0
2046	885	961	0	476	0	0	8.18	81	4	0	400	969	(961)	8	(100.00)	300	0
2047	884	960	0	476	0	0	8.69	122	4	0	350	960	(960)	0	(100.00)	450	0
2048	881	956	0	476	0	0	9.20	122	4	0	350	961	(956)	5	(100.00)	450	0
2049	882	958	0	476	0	0	9.20	122	4	0	350	961	(958)	3	(100.00)	450	0
2050	881	956	0	476	0	0	9.20	122	4	0	350	961	(956)	5	(100.00)	450	0

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Peak Load (MW)	Planning	Required Generation Capacity (MW)	Firm Generation Capacity without New Additions (MW)			CVR Firm Capacity (MW)	Wind Firm Capacity (MW)	Short Term PPA Capacity (MW)	Firm Generation Capacity with New Additions (MW)	Capacity Reserves Above Required			Nameplate Solar	Nameplate Wind
			Commercial DSM Firm Capacity (MW)	Residential DSM Firm Capacity (MW)	Distributed Solar Firm Capacity (MW)					Utility Solar Firm Capacity (MW)	Generation without New Additions (MW)	Reserve Margin without New Capacity Additions (%)		
2021	955	1,038	0	0	0.00	0	0	1,333	296	39.54	296	39.5	0	0
2022	978	1,062	5	2	0.00	0	0	1,351	281	37.36	288	38.1	0	0
2023	993	1,078	9	6	1.02	0	100	1,085	(109)	(2.39)	7	9.3	0	0
2024	919	998	14	10	1.53	0	0	998	(29)	5.39	0	8.6	0	0
2025	917	996	0	12	1.53	0	0	997	(27)	5.63	1	8.7	0	0
2026	916	995	0	11	1.53	0	0	995	(26)	5.75	0	8.6	0	0
2027	914	992	0	10	2.04	0	0	993	(23)	6.06	0	8.6	0	0
2028	909	987	8	6	2.04	0	200	998	(686)	(66.86)	11	9.8	0	0
2029	909	987	7	5	2.56	0	200	996	(686)	(66.86)	9	9.5	0	0
2030	906	984	5	4	3.07	41	150	984	(683)	(66.77)	0	8.6	150	0
2031	904	982	4	3	3.58	81	400	982	(972)	(98.87)	0	8.6	300	0
2032	900	978	3	2	3.58	81	400	980	(968)	(98.86)	2	8.8	300	0
2033	901	978	2	1	4.09	81	400	979	(968)	(98.87)	0	8.6	300	0
2034	899	976	1	1	4.60	81	400	978	(966)	(98.86)	2	8.8	300	0
2035	898	975	0	1	5.11	81	400	977	(965)	(98.86)	5	9.2	300	0
2036	895	972	0	0	5.62	81	400	977	(962)	(98.86)	4	9.1	300	0
2037	895	972	0	0	5.62	81	400	977	(962)	(98.86)	6	9.3	300	0
2038	894	971	0	0	6.13	81	400	977	(961)	(98.86)	7	9.4	300	0
2039	893	970	0	0	6.13	81	400	977	(960)	(98.86)	7	9.4	300	0
2040	890	966	0	0	6.64	81	400	978	(956)	(98.85)	11	9.9	300	0
2041	891	967	0	0	6.13	81	400	978	(957)	(98.85)	10	9.8	300	0
2042	889	966	0	0	7.15	81	400	968	(966)	(100.00)	2	8.8	300	0
2043	888	965	0	0	7.15	81	400	968	(965)	(100.00)	4	9.0	300	0
2044	885	961	0	0	7.15	81	400	968	(961)	(100.00)	7	9.4	300	0
2045	886	962	0	0	7.67	81	400	969	(962)	(100.00)	6	9.3	300	0
2046	885	961	0	0	8.18	81	400	969	(961)	(100.00)	8	9.5	300	0
2047	884	960	0	0	8.69	122	350	960	(960)	(100.00)	0	8.7	450	0
2048	881	956	0	0	9.20	122	350	961	(956)	(100.00)	5	9.1	450	0
2049	882	958	0	0	9.20	122	350	961	(958)	(100.00)	3	9.0	450	0
2050	881	956	0	0	9.20	122	350	961	(956)	(100.00)	5	9.1	450	0

2020 KP Mitchell CCR/ELG Analysis - Case 1 CCR and ELG
2020 Low Band No Carbon Commodity Pricing

KP Optimization Expansion Plan (Supply-side, Renewables, VVO, DR, EE) for Mitchell 1&2 CCR Expenditures Only (12/31/40 Retirement)

Year	Planning Peak Load (MW)	Firm Generation										Capacity Reserves Above		Capacity Reserves Above		Nameplate Solar	Nameplate Wind				
		Required Generation Capacity (MW)	Generation without New Additions (MW)	237 MW CT-Frame	Commercial DSM Firm Capacity (MW)	Residential DSM Firm Capacity (MW)	Distributed Solar Firm Capacity (MW)	Utility Solar Firm Capacity (MW)	CVR Firm Capacity (MW)	Wind Firm Capacity (MW)	PPA Capacity (MW)	Short Term Capacity (MW)	Firm Generation Capacity with New Additions (MW)	Required Generation Capacity (MW)	Reserve Margin without New Capacity Additions (%)			Generation with New Capacity Additions (MW)	Reserve Margin with New Capacity Additions (%)		
2021	955	1,038	1,333	0	0	0	0.00	0	0	0	0	0	0	0	1,333	295	39.51	295	39.5	0	0
2022	978	1,062	1,344	0	5	2	0.00	0	0	0	0	0	0	0	1,351	281	37.36	288	38.1	0	0
2023	993	1,078	969	0	9	6	1.02	0	0	100	0	0	0	0	1,085	(109)	(2.39)	7	9.3	0	0
2024	919	998	969	0	14	10	1.53	0	0	0	0	4	0	0	998	(29)	5.39	0	8.6	0	0
2025	917	996	969	0	12	10	1.53	0	0	0	0	4	0	0	997	(27)	5.63	1	8.7	0	0
2026	916	995	969	0	11	9	1.53	0	0	0	0	4	0	0	995	(26)	5.75	0	8.6	0	0
2027	914	992	969	0	10	8	2.04	0	0	0	0	4	0	0	993	(23)	6.06	0	8.6	0	0
2028	909	987	969	0	8	6	2.04	0	0	0	0	4	0	0	990	(18)	6.59	3	8.9	0	0
2029	909	987	969	0	7	5	2.56	0	0	0	0	4	0	0	987	(18)	6.61	0	8.6	0	0
2030	906	984	969	0	5	4	3.07	0	0	0	0	4	0	0	985	(15)	6.90	1	8.7	0	0
2031	904	982	678	0	4	3	3.58	0	0	300	0	4	0	0	992	(304)	(25.04)	10	9.7	0	0
2032	900	978	678	0	3	2	3.58	0	0	300	0	4	0	0	990	(300)	(24.71)	12	10.0	0	0
2033	901	978	678	0	2	1	4.09	0	0	300	0	4	0	0	989	(300)	(24.75)	11	9.8	0	0
2034	899	976	678	0	1	1	4.60	0	0	300	0	4	0	0	988	(298)	(24.59)	12	10.0	0	0
2035	898	975	678	0	0	0	4.60	0	0	300	0	4	0	0	988	(297)	(24.49)	13	10.0	0	0
2036	895	972	678	0	0	0	5.11	0	0	300	0	4	0	0	988	(294)	(24.24)	16	10.4	0	0
2037	895	972	678	0	0	0	5.11	0	0	300	0	4	0	0	987	(294)	(24.28)	15	10.3	0	0
2038	894	971	678	0	0	0	5.62	0	0	300	0	4	0	0	988	(293)	(24.19)	17	10.5	0	0
2039	893	970	678	0	0	0	5.62	0	0	250	0	4	0	0	978	(292)	(24.11)	8	9.5	150	0
2040	890	966	10	476	0	0	6.13	0	0	400	0	4	0	0	978	(956)	(98.85)	11	9.9	300	0
2041	891	967	10	476	0	0	6.13	0	0	400	0	4	0	0	978	(957)	(98.85)	10	9.8	300	0
2042	889	966	0	476	0	0	6.64	0	0	400	0	4	0	0	968	(966)	(100.00)	2	8.8	300	0
2043	888	965	0	476	0	0	7.15	0	0	400	0	4	0	0	968	(965)	(100.00)	4	9.0	300	0
2044	885	961	0	476	0	0	7.15	0	0	400	0	4	0	0	968	(961)	(100.00)	7	9.4	300	0
2045	886	962	0	476	0	0	7.67	0	0	400	0	4	0	0	969	(962)	(100.00)	6	9.3	300	0
2046	885	961	0	476	0	0	8.18	0	0	400	0	4	0	0	969	(961)	(100.00)	8	9.5	300	0
2047	884	960	0	476	0	0	8.69	122	0	350	0	4	0	0	960	(960)	(100.00)	0	8.7	450	0
2048	881	956	0	476	0	0	9.20	122	0	350	0	4	0	0	961	(956)	(100.00)	5	9.1	450	0
2049	882	958	0	476	0	0	9.20	122	0	350	0	4	0	0	961	(958)	(100.00)	3	9.0	450	0
2050	881	956	0	476	0	0	9.20	122	0	350	0	4	0	0	961	(956)	(100.00)	5	9.1	450	0

2020 KP Mitchell CCR/ELG Analysis - Case 2 CCR Only
2020 Low Band No Carbon Commodity Pricing

KP Optimization Expansion Plan (Supply-side, Renewables, VVO, DR, EE) for Mitchell 1&2 CCR Expenditures Only (12/31/28 Retirement)

Year	Planning Peak Load (MW)	Firm Generation Capacity		237 MW CT-Frame	Commercial			Distributed		CVR Firm Capacity (MW)	Wind Firm Capacity (MW)	Short Term PPA Capacity (MW)	Firm Generation Capacity with New Additions (MW)	Capacity Reserves Above Required		Reserve Margin with New Capacity Additions (%)	Capacity Reserves Above Required Generation with New Capacity Additions (MW)	Nameplate Solar	Nameplate Wind
		Required Generation Capacity (MW)	Capacity without New Additions (MW)		DSM Firm Capacity (MW)	DSM Firm Capacity (MW)	Residential DSM Firm Capacity (MW)	Solar Firm Capacity (MW)	Utility Firm Capacity (MW)					Capacity Reserves Above Required Generation without New Additions (MW)	Reserve Margin without New Capacity Additions (%)				
2021	955	1,038	1,333	0	0	0	0	0.00	0	0	0	1,333	296	296	39.54	296	0	0	
2022	978	1,062	1,344	0	5	2	0.00	0	0	0	0	1,350	281	288	37.36	288	0	0	
2023	993	1,078	969	0	9	6	1.02	0	0	0	100	1,085	(109)	7	(2.39)	7	0	0	
2024	919	998	969	0	14	10	1.53	0	0	4	0	998	(29)	0	5.39	0	0	0	
2025	917	996	969	0	12	10	1.53	0	0	4	0	997	(27)	1	5.63	1	0	0	
2026	916	995	969	0	11	9	1.53	0	0	4	0	995	(26)	0	5.75	0	0	0	
2027	914	992	969	0	10	8	2.04	0	0	4	0	993	(23)	0	6.06	0	0	0	
2028	909	987	301	476	8	6	2.04	0	0	4	0	998	(686)	11	(66.86)	11	0	0	
2029	909	987	301	476	7	5	2.56	0	0	4	0	995	(686)	8	(66.86)	8	0	0	
2030	906	984	301	476	5	4	3.07	0	0	4	0	984	(683)	0	(66.77)	0	150	0	
2031	904	982	10	476	4	3	3.58	0	0	4	0	982	(972)	0	(98.87)	0	300	0	
2032	900	978	10	476	3	2	3.58	0	0	4	0	980	(968)	2	(98.86)	2	300	0	
2033	901	978	10	476	2	1	4.09	0	0	4	0	979	(968)	0	(98.87)	0	300	0	
2034	899	976	10	476	1	1	4.60	0	0	4	0	978	(966)	2	(98.86)	2	300	0	
2035	898	975	10	476	0	1	4.60	0	0	4	0	977	(965)	2	(98.86)	2	300	0	
2036	895	972	10	476	0	0	5.11	0	0	4	0	977	(962)	5	(98.86)	5	300	0	
2037	895	972	10	476	0	0	5.11	0	0	4	0	977	(962)	5	(98.86)	5	300	0	
2038	894	971	10	476	0	0	5.62	0	0	4	0	977	(961)	6	(98.86)	6	300	0	
2039	893	970	10	476	0	0	5.62	0	0	4	0	977	(960)	7	(98.86)	7	300	0	
2040	890	966	10	476	0	0	6.13	0	0	4	0	978	(956)	11	(98.85)	11	300	0	
2041	891	967	10	476	0	0	6.13	0	0	4	0	978	(957)	10	(98.85)	10	300	0	
2042	889	966	0	476	0	0	6.64	0	0	4	0	968	(966)	2	(100.00)	2	300	0	
2043	888	965	0	476	0	0	7.15	0	0	4	0	968	(965)	4	(100.00)	4	300	0	
2044	885	961	0	476	0	0	7.15	0	0	4	0	968	(961)	7	(100.00)	7	300	0	
2045	886	962	0	476	0	0	7.67	0	0	4	0	969	(962)	6	(100.00)	6	300	0	
2046	885	961	0	476	0	0	8.18	0	0	4	0	969	(961)	8	(100.00)	8	300	0	
2047	884	960	0	476	0	0	8.69	0	0	4	0	960	(960)	0	(100.00)	0	450	0	
2048	881	956	0	476	0	0	9.20	0	0	4	0	961	(956)	5	(100.00)	5	450	0	
2049	882	958	0	476	0	0	9.20	0	0	4	0	961	(958)	3	(100.00)	3	450	0	
2050	881	956	0	476	0	0	9.20	0	0	4	0	961	(956)	5	(100.00)	5	450	0	



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E-Signature Summary

E-Signature 1: Mark A. Becker (MAB)

February 05, 2021 08:40:49 -8:00 [C14E6992102B] [167.239.2.87]
 mabecker@aep.com (Principal) (Personally Known)

E-Signature Notary: S. Smithhisler (SRS)

February 05, 2021 08:40:49 -8:00 [6F3C273F2271] [167.239.221.82]
 srsmithhisler@aep.com
 I, S. Smithhisler, did witness the participants named above electronically sign this document.



VERIFICATION

The undersigned, Mark A. Becker, being duly sworn, deposes and says he is a Managing Director of Resource Planning for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the forgoing testimony, and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.


Signed on 2021/02/05 08:40:49 -8:00

Mark A. Becker

STATE OF OHIO

)


) Case No. 2021-00004

COUNTY OF FRANKLIN

)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Mark A. Becker, this 5th day of February 2021.




Signed on 2021/02/05 08:40:49 -8:00

Notary Public

Notary ID Number: 2019-RE-775042



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