

**SOAH DOCKET NO. 473-16-4342
PUC DOCKET NO. 45866**

**APPLICATION OF LCRA § BEFORE THE STATE OFFICE
TRANSMISSION SERVICES §
CORPORATION TO AMEND ITS §
CERTIFICATE OF CONVENIENCE § OF
AND NECESSITY FOR THE §
PROPOSED LEANDER TO ROUND §
ROCK 138-KV TRANSMISSION LINE § ADMINISTRATIVE HEARINGS
IN WILLIAMSON COUNTY, TEXAS §**

DIRECT TESTIMONY AND EXHIBITS

OF

LISA B. MEAUX

ON BEHALF OF

**APPLICANT
LCRA TRANSMISSION SERVICES CORPORATION**

July 15, 2016

**SOAH DOCKET NO. 473-16-4342
PUC DOCKET NO. 45866
DIRECT TESTIMONY AND EXHIBITS OF LISA B. MEAUX**

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EXHIBITS

- Exhibit LBM – 1: Resume of Lisa B. Meaux
- Exhibit LBM – 2: Revised Data Tables 5-1 and 5-2

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DIRECT TESTIMONY OF LISA B. MEAUX**

I. POSITION AND QUALIFICATIONS

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Q. PLEASE STATE YOUR NAME AND ADDRESS:

A. My name is Lisa B. Meaux. My business address is 509 N. Sam Houston Parkway East, Suite 200, Houston, Texas 77060.

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

A. I am employed by POWER Engineers, Inc. (POWER) as Project Manager/Department Manager in the Environmental Division.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS.

A. Since 1998, when I was first employed as an environmental consultant, I have provided environmental planning and consulting services for electric transmission line projects, fiber optic projects, land development projects, and other energy-related projects, including gas pipelines and siting for generation facilities. The first environmental assessment I managed was a 345-kilovolt (kV) transmission line in Texas in 1999. Since that project, I have managed over 35 routing and environmental impact analyses for electric transmission line projects in Texas and other states, and I have worked in other capacities on over 25 additional transmission line projects. The projects I have managed range in size from 69-kV to 345-kV and have been as short as four miles to over 100 miles in length. My educational and professional qualifications are more fully presented in Exhibit LBM-1.

Q. HAVE YOU EVER SUBMITTED TESTIMONY BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS (COMMISSION OR PUC)?

A. Yes. I submitted testimony in Commission Docket Nos. 21741, 30617, 36995, 38517, 38324, 39479, 40125, 40216, 40953, 41674, 41756, and 44837.

1 **II. PURPOSE OF TESTIMONY**

2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

3 The purpose of my testimony is to introduce, support, sponsor, and describe the *Leander to*
4 *Round Rock 138-kV Transmission Line Project Environmental Assessment and Alternative*
5 *Route Analysis, Williamson County, Texas* (Environmental Assessment or EA) prepared by
6 POWER at the request of LCRA Transmission Services Corporation (LCRA TSC). The
7 EA, except Section 1, which was provided by LCRA TSC, is sponsored by me and is
8 included as Attachment No. 1 to LCRA TSC's application to amend its Certificate of
9 Convenience and Necessity (CCN) for the Leander to Round Rock 138-kV Transmission
10 Line Project in Williamson County, Texas, PUC Docket No. 45866 (Application), filed by
11 LCRA TSC on April 28, 2016.

12 **Q. WHAT PORTION OF THE APPLICATION DO YOU SPONSOR?**

13 A. I sponsor the answers to Questions 21, 22, 24, 26, 27, and 28 of the Application, as well as
14 a majority of the EA (except Section 1), which is included as Attachment 1 to the
15 Application. I also co-sponsor the answers to Questions 6, 20, and 23 with Ms. Jessica
16 Melendez, and I co-sponsor the answers to Questions 17, 18, 19, and 29 with Mr. Christian
17 Powell. Please refer to Exhibit CTP-1 in Mr. Powell's direct testimony for an overview of
18 LCRA TSC sponsorship of the Application in this case.

19 **Q. WERE YOUR TESTIMONY AND THE PORTIONS OF THE APPLICATION YOU**
20 **SPONSOR PREPARED BY YOU OR BY KNOWLEDGEABLE PERSONS UPON**
21 **WHOSE EXPERTISE, JUDGMENT, AND OPINIONS YOU RELY IN**
22 **PERFORMING YOUR DUTIES?**

23 A. Yes.

24 **Q. IS THE INFORMATION CONTAINED IN YOUR TESTIMONY AND IN THE**
25 **PORTIONS OF THE APPLICATION YOU SPONSOR TRUE AND CORRECT TO**
26 **THE BEST OF YOUR KNOWLEDGE AND BELIEF?**

27 A. Yes.

1 **III. ENVIRONMENTAL ASSESSMENT AND ROUTING STUDY**

2 **Q. WHY DID POWER PREPARE THE EA?**

3 A. POWER was retained by LCRA TSC to perform and prepare an environmental assessment
4 and routing study for the proposed Leander to Round Rock 138-kV Transmission Line
5 Project (Project). My responsibility as the Project Manager for POWER included oversight
6 of and participation in the preparation of the EA.

7 **Q. WAS ANYONE OTHER THAN YOU INVOLVED IN THE ENVIRONMENTAL**
8 **ASSESSMENT AND ROUTING STUDY PROCESS?**

9 A. Yes. A team of professionals with expertise in different environmental and land use
10 disciplines (geology/soils, hydrology/water quality, terrestrial ecology, wetland ecology,
11 land use/aesthetics, and cultural resources) was assembled by POWER (the “POWER
12 Project Team”) and was involved in data acquisition, routing analysis, and environmental
13 assessment for the Project. Section 6.0 of the EA presents a list of the primary preparers of
14 the EA.

15 **Q. WHAT DOES THE EA ADDRESS?**

16 A. The EA provides a detailed description of the data gathered and analyzed by POWER in
17 association with the Project and the routing procedures and methodology utilized by
18 POWER to delineate and evaluate possible alternative routes and substation sites.

19 **Q. WHAT INFORMATION DOES THE EA CONTAIN?**

20 A. The EA includes information on physiography, geology, soils, prime farmland, mineral
21 and energy resources, surface water, ground water, floodplains, vegetation, wildlife,
22 aquatic ecology, endangered and threatened species, socioeconomics, land use, habitable
23 structures, existing linear facilities, parks and recreation areas, aviation facilities,
24 communication facilities, aesthetics, and cultural resources as such information is
25 potentially related to the Project.

26 **Q. PLEASE DESCRIBE THE OBJECTIVES OF THE EA.**

27 A. The objectives of the EA were to identify and evaluate alternative transmission line routes
28 and substation sites for the Project. The approach taken by POWER consisted of a series of

1 tasks designed to address the requirements of Public Utility Regulatory Act (PURA)
2 § 37.056(c)(4)(A)-(D), Commission Substantive Rule 25.101(b)(3)(B), including the
3 Commission's policy of prudent avoidance, the Commission's CCN application
4 requirements, and LCRA TSC's routing practices. The tasks included scoping and study
5 area delineation, data collection, constraints mapping, preliminary alternative route
6 segment and alternative substation site identification, participation in public open house
7 meetings, and modification/addition of alternative route segments and alternative
8 substation sites following the public open house meetings and primary alternative route
9 evaluation.

10 **Q. WHAT PROCESS DID POWER UTILIZE TO IDENTIFY PRELIMINARY**
11 **ALTERNATIVE ROUTE SEGMENTS FOR THE PROJECT?**

12 A. To identify preliminary alternative route segments for the Project, POWER delineated a
13 study area, sought public official and agency input, gathered data regarding the study area,
14 performed constraints mapping, identified preliminary alternative route segments, and
15 reviewed and adjusted preliminary alternative route segments following field
16 reconnaissance and the public open house meetings.

17 Study Area Delineation

18 The study area for the Project was identified to include the two project endpoints and the
19 two proposed new substation siting areas. The study area boundaries were determined by
20 the Project's existing endpoints (the Leander and Round Rock substations), other existing
21 right-of-way (ROW), and existing cultural and land use features. Figure 2-1 of the EA
22 shows the study area identified by POWER and LCRA TSC.

23 Data Collection and Agency Contact

24 After the study area was identified, the POWER Project Team initiated a variety of data
25 collection activities. Data collection activities consisted of file and record reviews
26 conducted at various state regulatory agencies, review of published literature, and review
27 of a variety of available maps, including recent aerial photography (2015), U.S. Geological
28 Survey 1:24,000 scale topographical maps, National Wetland Inventory maps, Texas
29 Department of Transportation (TxDOT) county highway maps, and county appraisal

1 district parcel boundary data. During the course of the data collection activities, POWER
2 personnel also conducted reconnaissance surveys of the study area.

3 One of the data collection activities was the development of a list of local officials
4 and departments and local, state, and federal regulatory agencies to be mailed a
5 consultation letter in February 2015 regarding the Project. The purpose of the letter was to
6 inform the various officials and agencies of the project and to give those officials and
7 agencies the opportunity to provide any information they had regarding the Project and/or
8 the general Project area. In response, POWER and LCRA TSC received written and verbal
9 information from various public officials and agencies. Written responses to the
10 consultation letters are included in Appendix A of the EA.

11 Constraints Mapping

12 Given that a significant number of potential routes could be delineated to connect the
13 Leander Substation to the two proposed new substation siting areas and then to the Round
14 Rock Substation, a constraint mapping process was used in selecting and refining possible
15 alternative routes and substation sites. The information collected during the various data
16 collection activities was utilized to develop an environmental and land use constraints map.
17 Figures 4-27 (map pocket) and 5-1 (map pocket) of the EA depict the majority of the
18 environmental and land use constraints compiled by POWER. Cultural resources are not
19 shown on the figures to protect these sites.

20 Preliminary Alternative Route Segment and Substation Delineation

21 Upon completion of the initial data collection activities and constraint mapping process,
22 the next step in the routing process was to identify preliminary alternative route segments
23 to connect the Leander Substation with the two proposed new substation siting areas and
24 the Round Rock Substation. POWER delineated a network of preliminary route segments
25 between the Project end points and the two proposed substation siting areas. Working in
26 conjunction with LCRA TSC, POWER identified 11 alternative substation locations (six in
27 Substation Siting Area 1 and five in Substation Siting Area 2). The delineated network of
28 preliminary route segments and alternative substation locations was presented to the public
29 at the open house meetings on October 13 and 14, 2015 (Figure 4-1 of the EA).

30 Ultimately, following significant feedback from the public and public officials and
31 evaluation of the preliminary alternative route segments and alternative substation

1 locations, POWER worked with LCRA TSC to identify 160 primary alternative route
2 segments that connected the Leander and Round Rock substations and 16 alternative
3 substation sites for the two proposed new substations (eight in Substation Siting Area 1
4 and eight in Substation Siting Area 2). The locations of the primary alternative route
5 segments and 16 alternative substation sites presented in the Application are shown on
6 Figures 4-26a and b, 4-27 and 5-1 of the EA.

7 **Q. DID POWER CONSIDER INPUT FROM GOVERNMENTAL AGENCIES?**

8 A. Yes, as discussed in Section 4.3.2.4 of the EA, POWER solicited information and
9 comments from a variety of state and federal agencies with responsibilities in the areas of
10 natural and cultural resources.

11 **Q. DID POWER CONSIDER INPUT FROM LOCAL OFFICIALS?**

12 A. Yes, as discussed in Section 4.3.2.4 of the EA, POWER solicited information and
13 comments from a variety of local officials from Williamson County and the municipalities
14 within the Project area.

15 **Q. PLEASE DESCRIBE HOW AND WHEN IN THE PROCESS POWER UTILIZED
16 THE COMMENTS OR INFORMATION FROM GOVERNMENTAL AGENCIES,
17 AND LOCAL OFFICIALS.**

18 A. POWER utilized comments and information from governmental agencies and local
19 officials in the preparation of the environmental sections of the EA and the constraints
20 map, and in the selection and evaluation of both the preliminary and primary alternative
21 route segments and alternative substation sites.

22 **Q. WHAT PROCESS DID POWER UTILIZE TO IDENTIFY AND COMPARE THE
23 PRIMARY ALTERNATIVE ROUTES FOR THE PROJECT?**

24 A. In identifying the primary alternative route segments, POWER considered a variety of
25 information, including, but not limited to, input received from the public, input received
26 from various correspondence with public officials and representatives of state and federal
27 agencies, previously identified preliminary alternative route segments that provide
28 geographic diversity within the study area, as well as an inventory and tabulation of a
29 number of environmental/land use criteria for the primary alternative routes.

1 Public Input/Route Revisions

2 Feedback from the public was received in three primary ways. First, the preliminary
3 alternative route segments and 11 alternative substation sites (six in Substation Siting Area
4 1 and five in Substation Siting Area 2) were presented to the public during open house
5 meetings held on October 13 and 14, 2015 in Cedar Park and Leander. Attendees had one-
6 on-one conversations with personnel from POWER and LCRA about their interests and
7 comments concerning the Project. During the one-on-one conversations, attendees
8 provided comments and clarifications regarding structures and features depicted on the
9 large aerial photographs displayed at the public open house meetings. Attendees were also
10 encouraged to locate and mark particular features of interest on the aerial photography
11 exhibits. In that manner, POWER gained insight into particular features of the study area
12 as well as a sense of those values important to people potentially impacted by the Project.

13 Second, attendees at the public open house meetings were offered a questionnaire
14 that solicited comments on the Project. A copy of the questionnaire is included in
15 Appendix B of the EA. Of the 615 people who signed in at one of the public open house
16 meetings, a total of 255 submitted questionnaires at the meetings. In addition to the
17 questionnaires received at the public open house meetings, 1,433 additional questionnaires,
18 as well as thousands of letters and emails, were received from individuals and
19 organizations after the public open house meetings. In total, 1,688 questionnaires and over
20 3,500 letters and emails were received by LCRA TSC at or following the public open
21 house meetings, many of which were filed with the PUC in Project No. 45364. POWER
22 reviewed and evaluated each questionnaire, other information that was provided, and open
23 house attendee comments and preferences. That information was considered in the overall
24 identification and evaluation of the primary alternative route segments. Section 4.3.2.1 of
25 the EA provides a summary of the responses received in the questionnaires during and
26 after the public open house meetings.

27 Third, following the public open house meetings, LCRA TSC personnel held
28 numerous meetings with public groups, home owners associations, and local elected
29 officials and their staffs regarding the Project and the location of the preliminary
30 alternative route segments and alternative substation sites.

1 Following the receipt of public input, revisions were made to the preliminary
2 alternative route segments and five new alternative substation sites were identified. Many
3 of these revisions and alternative substation site additions were made in response to public
4 input/concern received by LCRA TSC and then discussed with POWER. The revisions are
5 documented in Section 4.4 of the EA with the resulting primary alternative route segments
6 and alternative substation sites depicted in Figure 4-26a and b of the EA.

7 Identification of Primary Alternative Routes

8 Hundreds of alternate routes may be formed by connecting the 160 primary alternative
9 route segments into various combinations. However, in order to create a manageable
10 analysis appropriate for the size and length of the Project, POWER and LCRA TSC
11 identified, through an interactive process, a total of 31 reasonable, feasible primary
12 alternative routes for comparison. Each of the identified routes connects to the Project
13 endpoints (the Leander and Round Rock substations) and one of the alternative substation
14 sites in each of the two substation siting areas. The primary alternative route segments that
15 comprise each of the 31 routes and the alternative substation sites connected with each
16 route are set forth in Table 4-2 of the EA.

17 Primary Alternative Route Evaluation/Impact Assessment

18 As detailed in Section 4.0 of the EA, 31 primary alternative routes were identified for
19 detailed analysis. These routes are shown on Figures 4-27 (map pocket) and 5-1 (map
20 pocket) of the EA. Each alternative route was examined from publicly accessible locations
21 in the field and from 2015 aerial photography. Each alternative route was evaluated
22 considering a variety of environmental and land use criteria. The evaluation of each route
23 involved inventorying and tabulating the number or quantity of each criterion along each
24 route.

25 **Q. WAS LCRA TSC INVOLVED IN THE REVIEW OF THE PRIMARY**
26 **ALTERNATIVE ROUTES?**

27 **A.** Yes, LCRA TSC reviewed the primary alternative routes with regard to cost, construction,
28 engineering, ROW maintenance issues, and constraints. LCRA TSC also conducted field
29 reviews of the 31 primary alternative routes.

1 **Q. PLEASE DESCRIBE THE PUBLIC INVOLVEMENT PROGRAM YOU**
2 **MENTIONED PREVIOUSLY.**

3 A. The public involvement program included two public open house meetings and a period of
4 consultation between LCRA TSC, POWER, and landowners. The purpose of the public
5 open house meetings, held in the study area on October 13 and 14, 2015, was to: (1) solicit
6 comments and input from residents, landowners, public officials, and other interested
7 parties concerning the Project, the preliminary alternative route segments, and the overall
8 transmission line routing process; (2) promote a better understanding of the Project,
9 including the purpose, need, potential benefits and impacts, and PUC certification process;
10 (3) inform the public with regard to the routing procedure, schedule, and route approval
11 process; and (4) gather information about the values and concerns of the public and
12 community leaders. Information received from agencies and officials and the public
13 involvement program was considered and incorporated into POWER's evaluation of the
14 Project. And, as I stated previously, following the public open house meetings, LCRA TSC
15 personnel held numerous meetings with public groups, home owners associations, and
16 local elected officials and their staffs regarding the Project and the location of the
17 preliminary alternative route segments and substations. Correspondence to and from local
18 officials and state and federal agencies regarding the Project is located in Appendix A of
19 the EA.

20 Since 2013, LCRA TSC has also maintained an internet website for the Project, as
21 described in Section 4.3.2.3 of the EA. The purpose of the website is to communicate with
22 the public and to provide the public with up-to-date Project information.

23 **Q. PLEASE DESCRIBE THE PROCESS FOLLOWED BY POWER TO EVALUATE**
24 **THE PRIMARY ALTERNATIVE ROUTES.**

25 A. The POWER Project Team evaluated the primary alternative routes based upon the
26 requirements set forth in PURA § 37.056(c)(4)(A)-(D), Commission Substantive Rule
27 25.101(b)(3)(B), including the Commission's policy of prudent avoidance, the
28 Commission's application requirements, and LCRA TSC routing practices. Section 5.0 of
29 the EA describes the evaluation of the primary alternative routes.

1 **Q. WHAT ARE THE RESULTS OF POWER'S EVALUATION REGARDING THE**
2 **PROJECT?**

3 A. No significant impacts to existing land use, socioeconomic, hydrological, ecological,
4 geological, or wetland resources and no adverse effects to historic-age or archeological
5 resources are anticipated as a result of construction of any of the primary alternative
6 segments or routes for the Project. Section 5.0 of the EA describes in detail the results of
7 the primary alternative route evaluation and the potential impacts for the primary
8 alternative routes.

9 **Q. ARE THE ROUTES INCLUDED IN THE APPLICATION CONSISTENT WITH**
10 **THE APPLICABLE PROVISIONS OF PURA AND THE COMMISSION'S**
11 **SUBSTANTIVE RULES?**

12 A. Yes. The POWER Project Team, with expertise in different disciplines (geology/soils,
13 hydrology, terrestrial ecology, wetland ecology, land use/aesthetics, and cultural resources
14 [archaeological and historical]) delineated and evaluated primary alternative routes for the
15 Project based upon environmental and land use conditions present along each potential
16 route, reconnaissance surveys, agency/official contacts, and the public involvement
17 program. The routes included in the EA were evaluated by POWER in accordance with the
18 requirements of PURA § 37.056(c)(4)(A)-(D), Commission Substantive Rule 25.101,
19 including the Commission's policy of prudent avoidance, the Commission's application
20 requirements, and LCRA TSC routing practices. All of the primary alternative routes and
21 their constituent route segments filed by LCRA TSC in the Application comply with the
22 routing requirements of PURA § 37.056(c)(4)(A)-(D) and Commission Substantive Rule
23 25.101(b)(3)(B). The routes vary in the tabulation of the various metrics, as would be
24 expected in a process that attempts to present a robust set of geographically diverse routes
25 for consideration. Additionally, because all the segments comply with PURA and
26 Commission Substantive Rule 25.101(b)(3)(B), other routes terminating at the Project end
27 points that may be created by combining existing segments would also comply with these
28 statutory and regulatory criteria.

1 **IV. INFORMATION ADDRESSING THE COMMISSION'S CCN APPLICATION**
2 **AND ISSUES OF COMMUNITY VALUES, RECREATIONAL AND PARK AREAS,**
3 **HISTORIC AND AESTHETIC VALUES, AND ENVIRONMENTAL INTEGRITY**

4 **Q. HOW WAS THE INFORMATION COMPILED BY POWER USED FOR**
5 **PURPOSES OF THE APPLICATION?**

6 A. POWER provided environmental and land use information for the primary alternative
7 routes, which was used to address several specific questions in the Application.

8 **Q. WHERE WILL THE PROJECT BE LOCATED?**

9 A. LCRA TSC proposes to design and construct a new 138-kV transmission line located in
10 Williamson County, Texas. The Project will connect the existing Leander Substation to
11 two new proposed substations and then to the existing Round Rock Substation.

12 **Q. WHAT ARE POWER'S FINDINGS REGARDING PROXIMITY TO HABITABLE**
13 **STRUCTURES IN THE VICINITY OF THE PRIMARY ALTERNATIVE**
14 **ROUTES?**

15 A. The number of habitable structures within 300 feet of the centerline of each of the primary
16 alternative routes is presented in Table 5-1 of the EA. The routes with the least number of
17 habitable structures located within 300 feet of the route centerline include Route 23 with
18 115 habitable structures, Route 12 with 186 habitable structures, and Route 8 with 254
19 habitable structures. The majority of these habitable structures will be newly affected
20 habitable structures, as explained below. Route 13 has the highest number of habitable
21 structures located within 300 feet of its centerline at 827.

22 General descriptions of the habitable structures within 300 feet of the centerline of
23 each route and their distances from the applicable segment centerline are provided in
24 Tables 5-3 through 5-33 in Appendix C of the EA. The habitable structures that are located
25 within 300 feet of the routes are shown on Figure 5-1 (Appendix E) of the EA.

26 **Q. WHAT IS THE TERM "NEWLY AFFECTED" MEANT TO IMPLY WITH**
27 **REGARD TO HABITABLE STRUCTURES?**

28 A. The term "newly affected" means a habitable structure that is not already located within
29 300 feet of an existing transmission line. In my opinion, habitable structures that already
30 have a transmission line within 300 feet will have a quantitative change potentially

1 affecting their visual environment and certain land uses, versus a qualitative change for
2 habitable structures not already having a transmission line present. The criterion “number
3 of newly affected habitable structures within 300 feet of ROW centerline” was included
4 and considered in the evaluation process (see Tables 4-3, 5-1, and 5-2).

5 **Q. WHY WAS THE “NEWLY AFFECTED” HABITABLE STRUCTURES**
6 **CRITERION INCLUDED IN THE APPLICATION?**

7 A. The number of habitable structures “newly affected” by a proposed transmission line route
8 has been considered by the Commission in some CCN proceedings. Additionally,
9 consideration of “aesthetic values” is required to be considered by the Commission in
10 PURA § 37.056(c)(4)(C) in a CCN application proceeding. I believe the existence or lack
11 of an existing transmission line within proximity to habitable structures is one method of
12 considering the aesthetic impacts of a new proposed transmission line. Accordingly, the
13 number of newly affected habitable structures for each route proposed for the Project was
14 tabulated and evaluated by POWER and included in the Application.

15 **Q. WHAT ARE POWER’S FINDINGS WITH RESPECT TO AM RADIO**
16 **TRANSMITTERS WITHIN 10,000 FEET OF THE CENTERLINE AND OTHER**
17 **TYPES OF ELECTRONIC INSTALLATIONS WITHIN 2,000 FEET OF THE**
18 **ROUTES?**

19 A. No known AM radio transmitters were identified within 10,000 feet of the centerline of
20 any of the primary alternative routes. There are 16 communication facilities (FM radio
21 transmitters, microwave towers and other electronic communications towers) located
22 within 2,000 feet of one or more of the primary alternative routes.

23 For each primary alternative route, the number of electronic installations (including
24 commercial FM transmitters, cellular telephone towers, microwave relay stations, or other
25 similar electronic installations) within 2,000 feet of the route centerline are shown in Table
26 5-1 of the EA. General descriptions of the electronic installations and their distances from
27 the centerlines of the routes are provided in Section 5.2.6 and in Tables 5-3 through 5-33
28 (Appendix C) of the EA and are shown on Figure 5-1 (Appendix D) of the EA.

1 **Q. WHAT ARE POWER'S FINDINGS WITH RESPECT TO FEDERAL AVIATION**
2 **ADMINISTRATION (FAA) REGISTERED AIRSTRIPS OR AIRPORTS,**
3 **PRIVATE AIRSTRIPS AND HELIPOINTS IN THE VICINITY OF THE**
4 **CENTERLINE OF THE ROUTES?**

5 A. No FAA-registered public airports were identified within 20,000 feet of any of the primary
6 alternative routes.

7 Three non-FAA-registered private airstrips were identified within 10,000 feet of the
8 centerline of one or more primary alternative routes. Breakaway Park Airport was
9 identified within 10,000 feet of 11 of the primary alternative routes (Routes 6, 8, 9, 10, 11,
10 12, 15, 16, 17, 23, and 24). Tri-Modal Air Park was identified within 10,000 feet of 20 of
11 the primary alternative routes (Routes 1, 2, 3, 4, 6, 7, 13, 14, 18, 19, 20, 21, 22, 25, 26, 27,
12 28, 29, 30, and 31). Green airstrip was identified within 10,000 feet of four of the primary
13 alternative routes (Routes 3, 4, 5, and 6). There are no FAA-registered heliports located
14 within 5,000 feet of any of the primary alternative routes.

15 For each primary alternative route, the number of non FAA-registered private
16 airstrips within 10,000 feet of ROW centerline are shown in Table 5-1 of the EA. General
17 descriptions of the non FAA-registered private airstrips and their distances from the
18 centerlines of the routes are provided in Section 5.2.4 and in Tables 5-3 through 5-33
19 (Appendix C) of the EA and are shown on Figure 5-1 (Appendix D) of the EA.

20 **Q. WHAT ARE POWER'S FINDINGS WITH RESPECT TO AREAS IRRIGATED BY**
21 **TRAVELING IRRIGATION SYSTEMS IN THE VICINITY OF THE ROUTES?**

22 A. None of the primary alternative routes cross any known cropland or pastureland irrigated
23 by traveling irrigation systems, either rolling or pivot type.

24 **Q. WHAT ARE POWER'S FINDINGS WITH RESPECT TO COASTAL**
25 **MANAGEMENT ZONE IMPACTS IN THE VICINITY OF THE PROJECT?**

26 A. No part of any of the primary alternative routes are located within the Coastal Management
27 Program boundary, as defined in 31 TAC § 503.1.

1 **Q. WILL LCRA TSC OBTAIN PERMITS OR APPROVALS TO CONSTRUCT THE**
2 **PROJECT?**

3 A. Yes, depending on the route approved, permits or other agency actions will be required to
4 construct and operate the Project and will be obtained as necessary by LCRA TSC if the
5 Application is approved. For example, depending on the route and location of a proposed
6 transmission line project, LCRA TSC regularly coordinates and complies with the
7 requirements of TxDOT, the Texas Commission on Environmental Quality (TCEQ), the
8 Texas Historical Commission (THC), U.S. Army Corps of Engineers, U.S. Fish and
9 Wildlife Service (USFWS), or the Texas General Land Office. LCRA TSC witness Ms.
10 Melendez further describes much of the permitting/agency action process in her direct
11 testimony. In addition, Mr. Powell addresses potential protected species permitting and
12 mitigation in his direct testimony.

13 **Q. WHAT ARE POWER'S FINDINGS WITH RESPECT TO POTENTIAL IMPACTS**
14 **TO PARKS AND RECREATIONAL AREAS, INCLUDING THE NUMBER OF**
15 **PARKS AND RECREATIONAL AREAS WITHIN 1,000 FEET OF THE**
16 **CENTERLINE OF THE PRIMARY ALTERNATIVE ROUTES?**

17 A. The study area has multiple parks and recreational areas as described in Section 5.2.5 in
18 the EA and as depicted on Figures 4-27 and 5-1 (Appendices D and E). Maximizing the
19 distance from parks and recreational areas was the third greatest concern noted on the
20 formal questionnaire responses received from the public, as discussed on page 4-5 of the
21 EA. A significant amount of public input and the highest number of negative comments on
22 public meeting questionnaires (see Table 4-1 in the EA) were received concerning
23 Segment N3, which is proposed on the south side of County Road 174/Brushy Creek
24 Road/Hairy Man Road where the Brushy Creek Regional Trail is located. In addition,
25 LCRA TSC received thousands of email comments, many of which specifically expressed
26 concern regarding the impact of the Project on the Brushy Creek Regional Trail.

27 Of all of the primary alternative route segments that have a portion of their ROW
28 across parks/recreational areas, Segment N3 has the longest length, with 1.7 miles of its
29 total length of 5.0 miles. Because it is located along the Brushy Creek Regional Trail, the
30 portion of Segment N3 on the south side of County Road 174/Brushy Creek Road/Hairy
31 Man Road has the potential to visually impact the most park facility users.

1 With regard to environmental impacts, Segment N3 has the longest length of ROW
2 tabulated through upland woodlands/brushlands with 2.9 miles, and through
3 bottomland/riparian woodlands with 0.4 miles. Segment N3 also has the second longest
4 length across Karst Zones 1 and 2; the third longest length across potential habitat for
5 threatened salamander species with 0.2 miles; the highest number of stream crossings; the
6 longest length of ROW parallel to streams or rivers with 0.5 miles; and the longest length
7 of ROW across 100-year floodplain. Segment N3 is a component of one route in the
8 Application (Route 15).

9 Segment E6 crosses the Southwestern Williamson County Regional Park for
10 approximately 1.6 miles in the northwestern portion of the park, which is away from the
11 western-central portion of the park along Perry Mayfield Boulevard and Borho Drive
12 where the park is more heavily utilized by the public.

13 With regard to environmental impacts, Segment E6 has the third longest length of
14 ROW tabulated through upland woodlands/brushlands with 2.2 miles and the greatest area
15 of ROW across golden-cheeked warbler modeled habitat (refer to page 2-31 in the EA)
16 with 14.8 acres. Segment E6 also has the third longest length across Karst Zones 1 and 2,
17 with the greatest area of ROW across Bone Cave harvestman recovery preserve, with 6.6
18 acres.

19 Segment E6 was added based on public input and to generally reduce the number
20 of habitable structures within 300 feet of segment/route centerlines and to avoid existing
21 residential areas. Refer to page 4-12 and Figure 4-11 in the EA. While Segment E6 does
22 generally avoid habitable structures within 300 feet (there are only five habitable structures
23 located within 300 feet of Segment E6), the tabulated data for the ecological criteria are
24 significantly higher than other segments such as T2 and Y2 that parallel exiting road ROW
25 and extend east-west through the central portion of the study area (refer to Table 5-2 in the
26 EA). Segment E6 is a component of Routes 5, 21, and 22.

27 Overall, there are 27 primary alternative routes with lengths across a park or
28 recreational area. There are 63 parks or recreational areas located within 1,000 feet of one
29 or more of the primary alternative routes. For each primary alternative route, the lengths
30 across a park or recreational area and number of parks or recreational areas within 1,000
31 feet of ROW centerline are shown in Table 5-1 of the EA. General descriptions of the

1 parks and recreational areas and their distances from the centerlines of the routes are
2 provided in Section 5.2.5 and in Tables 5-3 through 5-33 (Appendix C) of the EA and are
3 shown on Figure 5-1 (Appendix D) of the EA.

4 **Q. WHAT ARE POWER’S FINDINGS WITH RESPECT TO POTENTIAL IMPACTS**
5 **ON HISTORICAL AND AESTHETIC VALUES FROM THE PROJECT,**
6 **INCLUDING HISTORICAL AND ARCHAEOLOGICAL STIES WITHIN 1,000**
7 **FEET FROM THE CENTERLINE OF THE PRIMARY ALTERNATIVE**
8 **ROUTES?**

9 A. There are 82 known or recorded historic or prehistoric archaeological sites, two cemeteries,
10 one Official Texas Historical Marker, and no listed National Register of Historic Places
11 property recorded within 1,000 feet of the centerline of one or more of the primary
12 alternative routes. This information was determined by a literature review and records
13 search at the THC and the Texas Archeological Research Laboratory at the University of
14 Texas at Austin.

15 For each primary alternative route, the numbers of known or recorded historic or
16 prehistoric archaeological sites within 1,000 feet of the route centerline are shown in Table
17 5-1 of the EA. General descriptions of the known or recorded prehistoric archaeological
18 sites and their distances from the centerlines of the routes are provided in Section 5.3 and
19 in Tables 5-3 through 5-33 (Appendix C) of the EA.

20 The study area is primarily urban with concentrations of residential and commercial
21 development scattered throughout. Construction of the Project could have both temporary
22 and permanent aesthetic effects. Temporary impacts would include views of the actual
23 assembly and erection of the structures. Where wooded areas are cleared, the brush and
24 wood debris could have an additional temporary negative impact on the local visual
25 environment. Permanent impacts from the Project would involve the views of the
26 structures and lines. New visual impacts could be minimized by constructing the Project
27 within existing transmission line ROW or parallel to existing transmission lines.

28 Route 5 has the longest length within the foreground visual zone of U.S. and State
29 Highways, approximately 7.4 miles, while Routes 8, 9, 15, 23, and 24 have the shortest
30 length, approximately 0.8 miles each. The greatest length within the foreground visual
31 zone of Farm to Market roads is associated with Route 16, approximately 8.9 miles, while

1 Route 1 has the shortest length, approximately 2.7 miles. Route 16 has the longest length
2 within the foreground visual zone of parks or recreational areas, approximately 13.2 miles,
3 while Route 12 has the shortest length, approximately 9.5 miles. A summary of the lengths
4 for each of the primary alternative routes within the foreground visual zone of these areas
5 is presented in Section 5.2.7 and in Table 5-1 of the EA.

6 **Q. WHAT ARE POWER'S FINDINGS WITH RESPECT TO IMPACTS ON**
7 **ENVIRONMENTAL INTEGRITY FROM THE PROJECT?**

8 A. Each of the primary alternative routes has the potential to impact threatened and
9 endangered species.

10 Golden-Cheeked Warbler

11 Of the 31 primary alternative routes, 28 cross modeled potential golden-cheeked warbler
12 breeding habitat where the three models agree (refer to page 2-31 in the EA). The area of
13 ROW crossing modeled warbler habitat ranges from 0.0 acres for Routes 2, 20, and 31, to
14 23.1 acres for Route 23. To mitigate the impacts of the Project on endangered species,
15 LCRA TSC may elect to enroll in the Williamson County Regional Habitat Conservation
16 Plan (RHCP). Species covered under the RHCP include the Bone Cave harvestman, Coffin
17 Cave mold beetle, golden-cheeked warbler, and black-capped vireo. Additional
18 consultation with USFWS might be required if suitable habitat is observed during the field
19 survey of a PUC approved route.

20 Black-Capped Vireo

21 Modeling potential black-capped vireo habitat is difficult and generally inaccurate. If
22 necessary, a pedestrian field survey for potential suitable habitat for all listed species,
23 including the black-capped vireo, will be completed after PUC approval of an alternative
24 route. LCRA TSC may elect to enroll in the RHCP or consultation with USFWS might be
25 required if suitable habitat is observed during the field survey of a PUC approved route.

26 Karst Features

27 Because construction activities within the Project area have the potential to impact surface
28 and subsurface karst features and drainage networks connected to the karstic spring
29 systems associated with the Edwards aquifer and the species reliant upon it, POWER

1 contracted Cambrian Environmental to conduct an endangered karst invertebrate and
2 threatened salamander impacts analysis for each alternative route segment.

3 The ROW of Segments Y2, A1, J5, K5, and I5 crosses areas of known habitat for
4 the federally listed endangered Bone Cave harvestman. Ten of the 31 routes that include
5 these segments (Routes 2, 3, 4, 5, 6, 16, 20, 23, 24, and 31) cross a buffered Texas Natural
6 Diversity Database element of occurrence for the Bone Cave harvestman. For these ten
7 routes, the approximate lengths across these areas range from approximately 0.1 miles for
8 Routes 2, 16, 20, 23, 24, and 31, to approximately 2.5 miles for Route 4.

9 The approximate area of proposed ROW across a Williamson County Bone Cave
10 harvestman recovery preserve was also tabulated. The area of ROW crossing the Bone
11 Cave harvestman recovery preserve ranges from 0.0 acres for 28 of the routes, to 6.6 acres
12 for Routes 5, 21, and 22. The locations of these features were mapped using geographic
13 information system (GIS) tools and taken into consideration during the routing process. If
14 federally listed species are present, coordination with USFWS may be required.

15 There are two areas of designated critical habitat for the Jollyville Plateau
16 salamander located within the study area. USFWS-designated surface and sub-surface
17 critical habitat for Jollyville Plateau salamander is crossed by the ROW of Routes 8, 9, 10,
18 11, 12, and 17. The total lengths of these routes across surface and sub-surface critical
19 habitats are approximately 0.1 miles and 0.4 miles, respectively.

20 In addition, Cambrian Environmental identified areas of potential habitat locations
21 for the federally threatened Jollyville Plateau salamander and Georgetown salamander.
22 Areas identified in this study area as potential habitat for threatened salamander species
23 along the primary alternative routes were mapped using GIS and taken into consideration
24 during the routing process. These areas were buffered and lengths across these areas were
25 tabulated. Routes 1, 3, 27, 28, and 30 do not have any portion of their lengths across
26 potential habitat for threatened salamander species. For the remaining 26 routes, lengths
27 range from 0.1 miles for Routes 2, 5, 6, 7, 13, 14, 18, 19, 20, 21, 22, 25, 26, and 29, to 2.1
28 miles for Route 10. The likelihood of take actually occurring (as defined under the
29 Endangered Species Act) can be minimized to the extent practicable with relatively simple
30 conservation measures, beginning with avoidance of areas near springs where groundwater
31 occurs near the land surface. Consultation with USFWS might be required if known habitat

1 is crossed or potential suitable habitat is observed during the field survey of the PUC
2 approved route.

3 All 31 primary alternative routes cross USFWS developed Karst Zones 1 and 2 for
4 at least some of their length. The primary alternative route length across Karst Zones 1
5 (i.e., area that contains endangered cave species) and 2 (i.e., area that has a high probability
6 of endangered cave species or endemic cave fauna) ranges from approximately 3.8 miles
7 for Route 15, to approximately 14 miles for Route 6.

8 Spanning caves and karst features and implementing a Stormwater Pollution
9 Prevention Plan to the extent practicable will avoid and minimize significant adverse
10 impacts to karst invertebrates. As mentioned previously, LCRA TSC may elect to enroll in
11 the RHCP or additional consultation with USFWS might be required if known habitat is
12 crossed or potential suitable habitat is observed during the field survey of a PUC approved
13 route.

14 The impacts on environmental integrity are discussed further in Section 5.1 of the
15 EA. In addition to the potential impacts discussed above, the Project may cause short term
16 impacts to soil, water, and ecological resources. Notwithstanding the existence of
17 endangered species and habitat in the study area, the Project is not anticipated to
18 significantly adversely impact populations of any federally listed endangered or threatened
19 species. Prior to construction, a natural resources assessment will be conducted that will
20 consider threatened and endangered wildlife and plant species along the approved route.

21 **V. ADDITIONAL COMMISSION ROUTING CONSIDERATIONS**

22 **Q. HOW HAS THE POWER ANALYSIS CONSIDERED SUCH FACTORS AS**
23 **(1) USE AND PARALLELING OF EXISTING COMPATIBLE RIGHTS OF WAY,**
24 **(2) USE OF VACANT POSITIONS ON EXISTING MULTIPLE-CIRCUIT**
25 **TRANSMISSION LINES, AND (3) APPARENT PROPERTY LINES OR OTHER**
26 **NATURAL OR CULTURAL FEATURES?**

27 **A.** POWER considered each of the routing criteria that are contained in the Commission's
28 Substantive Rule 25.101(b)(3)(B) while also considering PURA § 37.056. Each
29 alternative route segment was developed to use and/or parallel existing compatible ROW
30 and property lines where feasible.

1 A portion of the Project could utilize parts of the existing LCRA TSC Round Rock
2 to Chief Brady 138-kV transmission line (T378) and the Chief Brady to Georgetown 138-
3 kV transmission line (T355) corridor. Where alternative route segments utilize the existing
4 T378 and T355 ROWs, new triple circuit H-frame structures would be required to support
5 the existing 138-kV circuit as well as the two new 138-kV circuits proposed as part of the
6 Project. Route 4 utilizes the most existing transmission line ROW, with approximately 5.7
7 miles. Twenty-nine of the 31 routes parallel existing transmission lines for at least some
8 distance. Route 5 parallels the most existing transmission line ROW, with 1.7 miles.

9 All of the primary alternative routes parallel other existing ROW to the extent
10 feasible. Route 4 parallels the most “other” existing compatible ROW (roads, highways,
11 etc.), with approximately 12.1 miles.

12 As described in Section 5.2.3.4 in the EA, there can be differences between how
13 landowners view their property boundaries and how the parcel lines are available from the
14 county tax appraisal district. In an attempt to reflect property boundaries, LCRA TSC
15 grouped the appraisal district parcels with identical, or nearly identical, ownership to
16 identify aggregate ownership and apparent property boundaries. Where there are
17 contiguous parcels in apparent common ownership, only paralleling of the outside
18 boundary of the parcels was tabulated as parallel to apparent property lines. Paralleling
19 interior parcel lines within a group of two or more contiguous parcels was not tabulated as
20 parallel to apparent property lines. Using this method, Route 13 has the longest percentage
21 of length that parallels apparent property lines (not including property lines along existing
22 roads or highways), approximately 35 percent. A summary of the lengths for each of the
23 primary alternative routes utilizing/paralleling existing transmission line ROW is presented
24 in Section 5.2.3.2, paralleling other existing compatible ROW is presented in Section
25 5.2.3.3, and paralleling property lines is presented in Section 5.2.3.4 and in Table 5-1 of
26 the EA.

27 **Q. HAVE AN ADEQUATE NUMBER OF ALTERNATIVE ROUTES BEEN**
28 **FORMULATED TO CONDUCT A PROPER EVALUATION?**

29 A. Yes. Considering the distance between the Project end points and the nature of the study
30 area, the 31 routes included in the Application provide an adequate number of alternative
31 routes for evaluation. Data for the environmental/land use criteria were collected for each

1 segment, and all of the segments were used to develop the primary alternative routes filed
2 in the Application. The 31 routes represent an adequate number of reasonable, viable,
3 geographically diverse alternative routes for an approximate 12 to 21 mile transmission
4 line project.

5 **Q. BRIEFLY DESCRIBE YOUR UNDERSTANDING OF THE COMMISSION'S**
6 **POLICY OF PRUDENT AVOIDANCE.**

7 A. Commission Substantive Rule 25.101 defines prudent avoidance as “the limiting of
8 exposures to electric and magnetic fields that can be avoided with reasonable investments
9 of money and effort.” My understanding of the Commission’s policy of prudent avoidance
10 is that the process of routing a transmission line should include consideration of routing
11 options that entail reasonably avoiding population centers and other locations where people
12 gather with a reasonable investment of money. This does not mean that a proposed
13 transmission line must avoid habitable structures at all costs, but that reasonable
14 alternatives must be considered.

15 **Q. DO THE PRIMARY ALTERNATIVE ROUTES COMPLY WITH THE**
16 **COMMISSION'S POLICY OF PRUDENT AVOIDANCE?**

17 A. Yes. The routes presented in the Application conform to the Commission’s policy of
18 prudent avoidance in that they reflect reasonable investments of money and effort in order
19 to limit exposure to electric and magnetic fields.

20 **Q. HAS POWER REVIEWED AND CONSIDERED MITIGATION MEASURES**
21 **PROPOSED BY LCRA TSC FOR THIS PROJECT TO DECREASE POTENTIAL**
22 **IMPACTS FROM THE PROPOSED LINES?**

23 A. Yes, mitigation measures for the Project are described in Sections 1.3, 1.4, 1.5, 1.6, 1.7,
24 and 5.0 of the EA.

25 **Q. WHAT ARE POWER'S CONCLUSIONS REGARDING THESE MITIGATION**
26 **MEASURES?**

27 A. Where applicable and practical, the proposed mitigation measures should mitigate the
28 potential adverse effects of construction and operation of the Project to an appropriate
29 extent.

1 **VI. REVISIONS TO THE EA**

2 **Q. SINCE THE FILING OF THE APPLICATION ARE THERE ANY**
3 **MODIFICATIONS THAT NEED TO BE MADE TO THE EA?**

4 A. Yes. On page iv of the Table of Contents in the EA, “*William County*” should be revised
5 to read “***Williamson County***” in the title of Appendix G.

6 On page 1-8 of the EA, the last sentence of the first paragraph, “*The geometry of a*
7 *typical tangent triple-circuit H-frame structure is shown on Figure 1-8.*” should be revised
8 to read, “*The geometry of a typical tangent triple-circuit H-frame structure is shown on*
9 *Figure 1-6.*”

10 On page 1-9 of the EA, the second to last sentence of the first paragraph, “*Figure*
11 *1-8 is a photograph of a typical electric substation.*” should be revised to read, “*Figure 1-*
12 *7 is a photograph of a typical electric substation.*”

13 On page 5-30 of the EA, the third sentence of the first paragraph, “*Where these*
14 *segments utilize the existing T378 and T355 ROWs, new triple circuit H-frame structures*
15 *(Figure 8-1) would be required to support the existing 138-kV circuit as well as the two*
16 *new 138-kV circuits to be added as part of the Leander-Round Rock project.*” should be
17 revised to read, “*Where these segments utilize the existing T378 and T355 ROWs, new*
18 *triple circuit H-frame structures (Figure 1-6) would be required to support the existing*
19 *138-kV circuit as well as the two new 138-kV circuits to be added as part of the Leander-*
20 *Round Rock project.*”

21 The text of Evaluation Criteria 51 and 52 in Table 4-3 and Tables 5-1 and 5-2
22 require revision in the EA. The text “*or determined eligible*” should be removed from both
23 criteria. Revised Data Tables 5-1 and 5-2 are provided as Exhibit LBM-2M.

24 **VII. SUMMARY AND CONCLUSION**

25 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

26 A. All of the primary alternative routes and their constituent segments are environmentally
27 acceptable, have been routed in a prudent manner, and comply with PURA and the
28 Commission’s rules, policies, and procedures for transmission line siting. All of the

1 primary alternative routes and segments in the Application are viable, feasible, and
2 environmentally acceptable.

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

4 A. Yes.