

BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF)
ENTERGY ARKANSAS, INC. FOR A)
CERTIFICATE OF PUBLIC CONVENIENCE AND)
NECESSITY TO CONSTRUCT, OWN,)
OPERATE, AND MAINTAIN A NEW 500 KV)
SUBSTATION AND ASSOCIATED FACILITIES IN)
CRAIGHEAD COUNTY, ARKANSAS)

DOCKET NO. 16-004-U

DIRECT TESTIMONY

OF

CLARK D. COTTEN
SENIOR ELECTRICAL ENGINEER

ON BEHALF OF THE GENERAL STAFF OF THE
ARKANSAS PUBLIC SERVICE COMMISSION

APRIL 8, 2016

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1

INTRODUCTION

2 **Q. Please state your name, employment and business address.**

3 A. My name is Clark D. Cotten. I am the Senior Electrical Engineer for the General
4 Staff (Staff) of the Arkansas Public Service Commission (Commission) in its
5 Telecommunications and Quality of Service Section at 1000 Center Street, Little
6 Rock, Arkansas.

7 **Q. Please state your qualifications and background.**

8 A. I earned a Bachelor of Science degree in Electrical Engineering from the
9 University of Arkansas in 1976, and I have been a registered Professional
10 Engineer in Arkansas since 1982. Before joining Staff in November 1999, I was
11 employed by Arkansas Power and Light Company (now Entergy Arkansas, Inc.)
12 or Entergy Services, Inc. for twenty-two years. At Entergy Arkansas, Inc., I held
13 positions as a Customer Service Engineer and Account Manager dealing with its
14 largest commercial and industrial customers in areas of tariff application, special
15 pricing, energy management, and distribution service. I also held the position of
16 Manager, District Customer Service overseeing both its customer service and
17 local engineering functions in an operating district in the northeast part of
18 Arkansas. I worked for Entergy Services, Inc. in its Distribution Standards Group
19 developing consistent engineering standards for distribution equipment to be
20 used by all Entergy operating companies, and in its Supply Side Planning Group
21 providing analysis in areas of Integrated Resource Planning, capacity expansion
22 and acquisition, plant retirement, and avoided cost. Since joining Staff, I have

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1 attended the National Association of Regulatory Utility Commissioners' two-week
2 Annual Regulatory Studies program at Michigan State University and I have
3 submitted testimony before the Commission addressing applications for
4 certificates of public convenience and necessity, certificates of environmental
5 compatibility and public need for both electric transmission facilities and power
6 generation facilities, the treatment of transmission facilities in rate unbundling
7 dockets, the acquisition of electric generating facilities, power factor issues, and
8 miscellaneous tariff filings.

9 **Q. Please describe Entergy Arkansas, Inc.'s filing in this Docket.**

10 A. On January 29, 2016, Entergy Arkansas, Inc. (EAI or Company) filed an
11 Application for a Certificate of Public Convenience and Necessity (CCN) (the
12 Application) to construct and operate a new 500/161 kilovolt (kV) transmission
13 substation and related transmission line terminal facilities (together the Proposed
14 Facilities) to be located near Jonesboro in Craighead County, Arkansas. The
15 Proposed Facilities do not constitute a major utility facility as defined in Arkansas
16 Code Annotated (Ark. Code Ann.) § 23-18-503(6). Therefore, this Application
17 was filed pursuant to Ark. Code Ann. §§ 23-3-201, *et seq.* and Rules 6.01 and
18 6.07 of the Commission's *Rules of Practice and Procedure (RPP)*. In support of
19 its Application, EAI filed the Direct Testimonies of Gerald D. Sachitano, Jr., and
20 Melinda K. Montgomery.

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1 **Q. What is the expected construction schedule for the Proposed Facility?**

2 A. EAI witness Sachitano stated that if a CCN is approved, EAI expects final
3 substation site work to be completed in the third Quarter 2016.¹ Substation
4 foundation work for the 500 kV and 161 kV switchyard, and related electrical
5 equipment, would be completed in the fourth Quarter 2016.² Installation of the
6 500 kV and 161 kV electrical equipment, autotransformer, and Gas Insulated
7 Switchgear (GIS) would start in the first Quarter 2017 with the termination of the
8 adjacent 500 kV and 161 kV transmission lines beginning in the second Quarter
9 2017.³ Final substation and transmission line construction, testing, and electrical
10 check-out would be completed in the fourth Quarter 2017.⁴ The projected in-
11 service date for the Proposed Facilities is scheduled for November, 2017.⁵

12 **PURPOSE**

13 **Q. What is the purpose of your Direct Testimony in this Docket?**

14 A. I will present my evaluation and recommendations regarding the need for, and
15 the design and construction of, the Proposed Facilities. I also present my
16 evaluation of the factors to be considered in determining the reasonableness of
17 the location of the Proposed Facilities and my recommendation regarding
18 whether the construction is in the public interest. In addition, I address EAI's
19 compliance with notice requirements, the intervention granted Midcontinent

¹ Direct Testimony of Gerald D. Sachitano, Jr., p. 10, January 29, 2016.

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ *Id.*

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1 Independent System Operator, Inc. (MISO) in this Docket, and any comments
2 that have been received from the public relating to the Proposed Facilities.

3 **CCN EVALUATION**

4 **Q. What is the basis for your evaluation of EAI's Application for a CCN?**

5 A. My evaluation of EAI's request for a CCN is based on state law, previous
6 Commission Orders, the Commission's *RPP* and *Special Rules - Electric*, the
7 Direct Testimonies filed by EAI in support of the Application, and site-specific
8 information associated with the Proposed Facilities.

9 **Q. What standard did you apply to determine the reasonableness of the**
10 **proposed location?**

11 A. In order to determine if the location proposed by EAI is reasonable, I relied on
12 previous Commission Orders in which the Commission identified certain factors
13 that should be considered in determining whether the route or location chosen by
14 the utility is reasonable. I address these factors later in my testimony.

15 **Q. Have you visited the site of the Proposed Facilities?**

16 A. Yes.

17 **Need For the Facilities**

18 **Q. Please describe the need for the Proposed Facilities.**

19 A. EAI witness Montgomery states that the Proposed Facilities are needed to
20 improve reliability and satisfy Requirement 2 of NERC (North American Electric

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1 Reliability Corporation) Reliability Standard TPL-001-4⁶ as it applies to three
2 Planning Event Categories: P1-2 Single Contingency loss of a transmission
3 circuit; P2-2 Single Contingency Bus Fault; and P2-3 Single Contingency Internal
4 Breaker Fault.⁷ Ms. Montgomery states that the NERC requirements state that
5 analyses of the transmission system performance must confirm that thermal
6 ratings will not be exceeded for events involving any one of these Planning Event
7 Categories.⁸

8 Ms. Montgomery also states that numerous single contingencies on the
9 161 kV transmission facilities in the Jonesboro area result in power flows that
10 could exceed the applicable thermal ratings and acceptable planning criteria
11 described in the NERC Transmission Planning Standard TPL-001-4 and the
12 Company's Local Planning Criteria.⁹

13 **Proposed Transmission Facility and Proposed Route**

14 **Q. Please describe the Proposed Facilities and location.**

15 A. The Proposed Facilities will consist of the construction of the 500/161 kV
16 transmission substation and associated 500 kV and 161 kV switchyards on
17 property owned by EAI in the northwest quadrant of the intersection of the 161
18 kV Jonesboro to Jonesboro Hergett and Jonesboro Hergett to Truman
19 transmission lines¹⁰, and the Independence Steam Electric Station

⁶ See NERC Transmission Planning Standard, TPL-001-4, publically available at:
<http://www.nerc.com/files/TPL-001-4.pdf>.

⁷ Direct Testimony of Melinda K. Montgomery, p. 10, January 29, 2016.

⁸ *Id.*

⁹ *Id.* at 11.

¹⁰ Both of these transmission lines are supported on a single H-frame structure as a double circuit transmission line.

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1 (Independence) to Dell 500 kV transmission line.¹¹ The interconnection of the
2 new 500/161 kV substation will require the six new transmission line segments to
3 be terminated in the new switchyards, two segments for each of the three
4 existing transmission lines.¹² A map of the Proposed Facilities is included as
5 Attachment A to EAI Application Exhibit D and drawings of typical structures are
6 included as Attachment B to EAI Application Exhibit D.

7 **Commission Findings and Determinations for the Proposed Facilities**

8 **Q. Please explain the basis for the project evaluation.**

9 A. Order No. 12 in Docket No. 89-164-U and Order No. 5 in Docket No. 91-182-U
10 identified seven factors that should be considered in the siting of transmission
11 facilities in determining whether the route or location chosen by the utility is
12 reasonable. Those seven factors are:

- 13 1. Cost of the Facilities;
- 14 2. Health and Safety;
- 15 3. Engineering and Technical Concerns;
- 16 4. Ecological/Environmental Disruptions;
- 17 5. Disruptions to Existing Manmade Property Uses;
- 18 6. Disruptions to Planned Manmade Property Uses; and
- 19 7. Aesthetic Displeasure.

¹¹ Sachitano, Jr. Direct Testimony, p. 6.

¹² Application Exhibit D, pp.21 - 22.

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1 **Evaluation Of Factors For The Proposed Facilities**

2 **Q. What is the estimated cost of the Proposed Facilities and how will they be**
3 **financed?**

4 A. The total estimated cost for the Proposed Facilities is \$55,900,000.¹³ EAI will
5 finance the construction with funds available from various sources, including
6 retained earnings, debt, and capital securities.¹⁴ No other alternative financing
7 methods are considered appropriate at this time.¹⁵ This project does not qualify
8 for issuance of tax-exempt bonds.¹⁶

9 **Q. How will EAI satisfy health and safety concerns?**

10 A. Witness Sachitano stated that the Proposed Facilities will be constructed
11 according to the requirements of the *National Electrical Safety Code*.¹⁷ This is
12 consistent with the Commission's minimum construction standards established in
13 the Commission's *Special Rules – Electric*, Rule 5.01 and Rule 5.02, which
14 designate the current issue of the *National Electric Safety Code* and the *National*
15 *Electrical Code* as standards.

¹³ Sachitano, Jr. Direct Testimony, p.15 - 16.

¹⁴ *Id.* at 16.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.* at 17.

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1 **Q. Are there any engineering or technical concerns associated with this**
2 **project?**

3 A. EAI witness Sachitano stated that there are no engineering or technical
4 concerns.¹⁸ Based on my review of the proposed construction, I agree that there
5 are no engineering or technical concerns with the proposed construction.

6 **Q. Describe the types of ecological/environmental disruptions that will be**
7 **caused by this project.**

8 A. EAI witness Sachitano stated that disruptions will be minimal.¹⁹ EAI retained
9 GBMC and Associates of Bryant, Arkansas, to perform a Phase 1 Environmental
10 Site Assessment on the site to determine the presence or likely presence of any
11 hazardous substances or petroleum products that indicate an existing release, a
12 past release, or a material threat of a release of those substances into structures
13 on the property or into the ground, groundwater, or surface water of the
14 property.²⁰ The assessment did not reveal any evidence of recognized
15 environmental conditions for this tract of property.²¹

16 **Q. Will construction of this project disrupt existing manmade property uses?**

17 A. Based on the testimony of witness Sachitano, no major disruptions are
18 expected.²² The Proposed Facilities will not adversely impact any private or
19 single-family residences, or interfere with any state or federal national park

¹⁸ Sachitano, Jr. Direct Testimony, p.20.

¹⁹ *Id.*

²⁰ *Id.* at 21.

²¹ *Id.*

²² *Id.* at 22.

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1 lands.²³ Temporary or short-term impacts from construction of the project that
2 may affect local residents will include increased traffic along state highways and
3 county roads and soil disturbances, such as compacting and rutting, and
4 construction noise and fugitive dust.²⁴

5 **Q. Does the proposed project disrupt planned property uses?**

6 A. Based on the testimony of witness Sachitano, no disruption to planned property
7 uses will occur as EAI owns the site for the Proposed Facilities and no additional
8 land is anticipated to be required.²⁵

9 **Q. Were the aesthetics of the project considered?**

10 A. Yes. Witness Sachitano stated that the structures were selected to minimize the
11 aesthetic displeasure of the new installation and that 161 kV circuit breakers will
12 be of the modular, low profile gas design to enhance the visual appearance.²⁶
13 The 500 kV switchyard will be enclosed in an aesthetically designed building
14 housing the GIS equipment that drastically minimizes the space required.²⁷ The
15 aesthetics of the area already include three existing transmission lines.

16 **Q. Based on your evaluation of these factors, what is your conclusion
17 regarding the location of the Proposed Facilities?**

18 A. Based on my review of the Application and the Direct Testimonies filed by EAI, I
19 conclude that the location of the Proposed Facilities is reasonable.

²³ *Id.*

²⁴ Sachitano, Jr. Direct Testimony, p.22.

²⁵ *Id.*

²⁶ *Id.* at 22 - 23.

²⁷ *Id.* at 23.

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1 **Q. Have the Proposed Facilities been integrated into the MISO transmission**
2 **planning process?**

3 A. Yes. MISO was granted Intervention in this Docket and filed the Direct
4 Testimony of Edin Habibovic on March 15, 2016. His testimony provided an
5 overview of MISO's transmission planning process and stated that the Proposed
6 Facilities successfully improves the reliability of the 161 – 115 kV transmission
7 network and provides voltage support and alleviates thermal violations in the 161
8 – 115 kV bulk electric system.²⁸ He further stated that MISO concurs with EAI's
9 Transmission Planning Department that the Proposed Facilities are needed and
10 that the Proposed Facilities are included in the 2015 MTEP (MISO Transmission
11 Expansion Plan).²⁹

12 **NOTICE REQUIREMENTS**

13 **Q. Has notice of this Application and proceeding been served on all parties as**
14 **required by the Commission's RPP, Rules 4.03 and 6.03(a)?**

15 A. EAI owns an 80 acre tract at the location of the Proposed Facilities that contains
16 enough property for construction of the substation and switchyard, and the
17 termination of the existing 500 kV and 161 kV transmission lines.³⁰ Only minimal
18 additional right-of-way may be required for possible guy wire clearances for the
19 161 kV transmission line segments terminating into the site.³¹ Accordingly, EAI
20 has notified landowners of adjacent tracts of land that could be affected by the

²⁸ Direct Testimony of Edin Habibovic, pp. 14 – 16, March 15, 2016.

²⁹ *Id.* at 16.

³⁰ Sachitano Direct Testimony, p. 24.

³¹ *Id.*

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1 Proposed Facilities.³² EAI provided a Certification of Proof of Service as EAI
2 Application Exhibit E.³³ In addition EAI caused to be published in the *Jonesboro*
3 *Sun*, a newspaper circulating in Jonesboro and surround communities in
4 Craighead and Poinsett Counties, as well as other northeast Arkansas
5 communities, a legal notice concerning the Proposed Facilities.³⁴ EAI provided
6 Certification of Proof of Notice on February 19, 2016, that notice was published in
7 the *Jonesboro Sun*.³⁵

8 **Q. Have written public comments been received in this Docket?**

9 A. There have been no public comments entered in this Docket.

10 **CONCLUSIONS AND RECOMMENDATIONS**

11 **Q. Is your analysis consistent with the appropriate scope of inquiry the**
12 **Commission will consider in granting a CCN?**

13 A. Yes. Commission Orders in Docket Nos. 94-003-U and 89-164-U offer guidance
14 to Staff in its evaluation of the location of transmission facilities. Specifically,
15 Order No. 7 in Docket No. 94-003-U at page 8, citing In Re Arkansas Power &
16 Light Company, 118 PUR4th 156, 164-65 (1990), states, in part:

17 It is not the function of a public utility regulatory agency to substitute
18 or superimpose its judgment for that of a utility as to the location of
19 proposed new transmission facilities. If the route selected by the
20 utility is not unreasonable and appears to have been chosen after
21 consideration of the seven factors previously enumerated, and any
22 other factors which may be relevant in that specific case, then in

³² *Id.*

³³ *Id.* at 25.

³⁴ *Id.*

³⁵ Document No. 7, Docket 16-004-U

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1 the absence of special or very unusual circumstances the
2 governmental regulatory body reviewing the application for a
3 certificate of public convenience and necessity should confine itself
4 to only ordering minor deviations in the route.

5 **Q. What are your recommendations regarding the need for the facility and**
6 **whether granting EAI's Application for a CCN is in the public interest?**

7 A. EAI has presented evidence that the Proposed Facilities are needed to satisfy
8 Requirement 2 of NERC Reliability Standard TPL-001-4 as it applies to three
9 Planning Event Categories: P1-2 Single Contingency loss of a transmission
10 circuit; P2-2 Single Contingency Bus Fault; and P2-3 Single Contingency Internal
11 Breaker Fault. Based on the Direct Testimonies filed by EAI and MISO, I
12 conclude that the Proposed Facilities are in the public interest.

13 **Q. Based on your evaluation of the seven factors considered in determining**
14 **whether the route or location chosen by the utility is reasonable, what is**
15 **your conclusion regarding the Proposed Facilities?**

16 A. Based on my evaluation of the information provided in EAI's Application and
17 Direct Testimonies filed in support of its Application, it appears that the seven
18 factors have been adequately addressed in selecting the location for the
19 Proposed Facilities.

20 **Q. Have the notice provisions of Rule 4.03 and 6.03(a) of the Commission's**
21 **RPPs been met?**

22 A. Yes.

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1 **Q. What is your recommendation regarding EAI's Application for a CCN?**

2 A. Based upon my evaluation of the Application and other information, I recommend
3 that the Commission grant EAI a CCN to build, operate, and maintain the
4 Proposed Facilities as requested in its Application.

5 **Q. Do you have any other recommendations?**

6 A. Yes. I recommend that EAI be directed to comply with Rules 6.05(a) and (b) of
7 this Commission's *RPPs* by filing the required completion or delay of construction
8 reports in Docket No. 16-004-U. I also recommend that the Commission specify
9 in its order that nothing in this proceeding be construed as a finding of value for
10 rate-making purposes.

11 **Q. Does this conclude your testimony?**

12 A. Yes.

CERTIFICATE OF SERVICE

I, Justin A. Hinton hereby certify that a copy of the foregoing has been served on all Persons on the Official Service List by electronic mail via the Commission's Electronic Filing System on the 8th day of April, 2016.

/s/ Justin A. Hinton
Justin A. Hinton