

ENGINEERING REPORT

TRI-COUNTY ELECTRIC COOPERATIVE

v.

AMEREN IP

D/b/a ILLINOIS POWER COMPANY

CASE # 05-0767

BEFORE THE

ILLINOIS COMMERCE COMMISSION

October 2007

**Robert C. Dew, Jr., PE
Hi-Line Engineering
1850 Parkway Place, Suite 800
Marietta, GA 30067**

INTRODUCTION

The Tri-County Electric Cooperative headquartered at Mt. Vernon, Illinois has provided electrical service in Marion County, Illinois since they were originally incorporated in the 1930s. Specifically, they have provided electric utility service in the vicinity of what is now known as the Salem Oil Fields since 1939. This dispute between Tri-County EC and Ameren IP is the result of Citation Oil Company (which is currently an Ameren IP Customer and a Tri-County EC customer) providing service to a new service point, i.e., the new gasification plant located 200 to 250 feet north of Green Street Road in Tri-County EC service territory.

BACKGROUND

Illinois Power Company and Tri-County Electric Cooperative entered into a Service Area Agreement on March 18, 1968. This agreement is currently in the record so only portions of it will be quoted and reproduced in this report. Some of the pertinent sections are as follows:

Section 1 (a) "Party" as used herein refers to one of the parties in this Agreement.

(b) "Existing customer" as used herein means a customer who is receiving electric service on the effective date hereof.

(c) "New customer" as used herein means any person, corporation, or entity, including an existing customer, who applies for a different electric service classification or electric service at a point of delivery which is idle or not energized on the effective date of this Agreement.

(d) "Existing point of delivery" as used herein means an electric service connection which is in existence and energized on the effective date hereof. Any modification of such electric service connection after the effective date, hereof by which an additional phase or phases of electric current are added to the connection, shall be deemed to create a new point of delivery.

A "point of delivery" as defined in the agreement could consist of service at a higher distribution voltage such as 12,470 volts, a bank of 3 step down transformers with cutouts and

fuse protection, mounting brackets on a wooden utility pole, a meter with associated CTs and PTs as well as appropriate service conductors. To hold the pole up, appropriate guys and anchors would be necessary as well. The transformers step the voltage down from 12,470 volts to 120/240 volts or 277/480 volts depending upon the voltage requirements of the motors and equipment being served. The customer would typically supply the low side protective equipment and all low side wiring. This is a description of the service to the 8 new gas wells. Furthermore, a "point of delivery" as defined in the agreement could also consist of service at a higher distribution voltage such as 12,470 volts and a padmounted 3Ø transformer supplying 120/240 volts or 277/480 of electricity such as the service to the gas plant. A point of delivery is simply an electrical connection per the agreement. The eight new gas wells were not energized on March 18, 1968. They are, therefore, a "New Customer" and require a "New Point of Delivery" as defined in the Service Area Agreement of March 18, 1968, in my opinion.

The proposed new gas plant is anticipated to have a total connected load of 566 kW and is therefore subject to Section 3(a) of the Service Area Agreement dated March 18, 1968. Furthermore, the gas plant electrical load is physically located in the Tri-County EC Service Territory as defined by the Service Territory Agreement. Since the new gas plant was not in existence and therefore not energized on March 18, 1968, it is both a "New Customer" and a "New Point of Delivery" as defined in the Service Area Agreement of March 18, 1968, in my opinion.

I visited the site on Monday, October 16, 2006 and met with Mr. Michael R. Garden, who is the Production Foreman at the Citation Oil field. Along with me were Mr. Jerry Tice, Tri-County EC's attorney, Mrs. Marcia Scott, the Cooperative's CEO, Mr. Dennis Ivers, the Cooperative's Engineer, and Mr. Steve Thomas, the Cooperative's Operations Manager. We reviewed the map showing the Citation Oil field well locations. We examined the service to the new gasification plant as well as the primary electric facilities used to serve the gas plant. Additionally, we looked at, but did not enter, the Texas Substation and the low side structure that Citation Oil uses as a breaker station.

Based upon this visit and inspection, the electric service to the new gas plant required the construction of approximately 4119 feet of new 3Ø 2/0 ACSR conductor, the conversion of approximately 1161 feet of single phase #4 CU to 3Ø 2/0 ACSR conductor as well as the construction of approximately 500 feet of 3Ø underground primary construction, and the installation of a new transformer new meter, and new service conductors added to the Citation Oil distribution system. On the other hand, Tri-County EC could have served this load by constructing 250-300 feet of new 3Ø, underground primary from its existing 3Ø, overhead primary circuit that has been in existence since 1948. A new transformer, meter and service drop would have to be added as well to serve this "new delivery point" and provide service.

Furthermore, we drove to each of the feeder well sites that provide product to the gasification plant. By field inspection and after comparing the well locations to the territorial map, I determined that seven of the eight wells lie inside Tri-County EC's service territory and outside of I.P.C. territory. These locations are shown on Tri-County's map excerpt labeled Exhibit #3. The services to each of these wells consists of 3Ø overhead high voltage primary line on wooden poles operated at 12,470 V, a transformer bank consisting of 3-75 KVA overhead transformers, a driven ground rod, 3 fused cutouts and 3 lightning arresters as well as necessary service conductors to book the customers low side service entrance gear. Additionally, each transformer bank was mounted on a wooden dead end pole with necessary brackets, cleves, guys and anchors to make the structure stable. In my opinion, each of these wells required a service connection point that was not in existence nor energized at the time of the agreement. Therefore, each well is a "new customer" as defined in the Service Area Agreement.

I visited and inspected the Texas Substation on December 19, 2006 with representatives of Ameren IP and Tri-County Electric Cooperative. Based upon my site visit to the Texas Substation on December 19, 2006, I noticed that the substation had been extensively modified during the time it had been in service. Also, based upon the paper documents that we received that day from an Ameren/IP representative, I am able to develop a rough chronology of this particular substation. Since that time, I learned that there are some additional documents that

only exist in electronic format that have since then been sent to me; however, the original kVA, physical size, and configuration of the Texas Substation remains unknown to me.

In addition to the electrical diagram list dated November 24, 1974 (attached), there is also a list of drawings stored in digital format that has been produced by IP. These documents are cataloged as CE-MAG1-03.1 to E-MAG1-58.2 dated from March 31, 1952 to August 20, 1991, respectively. These drawings are in no particular order and there appear to be drawings missing based upon the numbering scheme. Also, I have seen no drawing of this substation or previous substation dated before March 31, 1952. Additionally, almost all drawings show numerous revisions and revision dates in the title block as detailed below.

The first drawing, CE-MAG1-03.1 originally dated 1952, shows the general location plan and single line wiring diagram for the Magnolia-Texas Oil Company Substations. This drawing has been revised 16 times from 1952 to 1991 per the title block. Some of the significant modifications include adding a 69 kV bay in 1957, adding capacitor banks in 1961, 1968, adding Transformer #2 in March 16, 1965, and adding a 12 kV circuit breaker in 1991, thus increasing the kVA capacity of the substation.

The second drawing, CE-MAG1-04.1, originally dated 1952, shows the grading and draining plan for this substation. It contains four revisions dated 1952 through 1972. Some of the significant modifications include adding the foundation for Transformer #2 in 1965, and adding the 15 kV oil circuit breaker foundation in 1972.

The third drawing, CE-MAG1-11.1, originally dated 1952, shows the foundation plan for this substation. It contains eight revisions dated 1953 through 1991. Some of the significant modifications include adding new foundations for a capacitor bank in 1961, adding foundations for a 6000 KVAR capacitor on February 24, 1969, and adding additional oil circuit breaker and a vacuum circuit breaker in 1972 and 1991, respectively. These modifications release additional capacity in the substation.

The fourth drawing, CE-MAG1-11.2, originally dated 1952, shows foundation details. It contains three revisions dated 1952 through 1957.

The fifth drawing, AE-MAG1-11.8, originally dated 1991, shows the foundation detail – F5 - 15 kV vacuum breaker for the subject substation. No revisions are shown.

The sixth drawing, AE-MAG1-11.9, originally dated 1991, shows the foundation detail – F6 Uninterruptible Power Supply for the subject substation. No revisions are shown.

The seventh drawing, CE-MAG1-12.1, originally dated 1952, shows the lighting and grounding layout and details for the subject substation. This drawing has been revised 12 times from 1952 until 1991. Some of the revision block has been erased but some of the significant modifications have been the addition of two additional circuits in 1965, the addition of a 6000 KVAR capacitor in 1969, adding foundations and grounding for a 15 KV oil circuit breaker in 1972.

The eighth drawing, CE-MAG1-21.1-1, originally dated 1952, shows the Plan (View) Electrical Arrangement for the subject substation. This drawing has been revised 15 times from 1952 until 1991. Some of the revision descriptions have been erased but some of the significant modifications have been the addition of an oil circuit breaker in 1972, the replacement of Transformer #2 in 1976 per Work Order 25401, and the addition of a 12 kV circuit breaker in 1991, thus increasing the kVA capacity of the substation.

The ninth drawing, CE-MAG1-21.1-2, originally dated 1952, shows Sections (View) Electrical Arrangement of the subject substation. This drawing has been revised 11 times from 1952 through 1991. Some of the significant modifications to the substation that was documented by a revision include adding a new 69 kV bay in 1957, adding a capacitor bank in 1961, and adding an oil circuit breaker in 1972.

The tenth drawing, CE-MAG1-21.1-3, shows Sections – Electrical Arrangement. This drawing was originally dated 1952 and shows six revisions from 1952 to 1992. Some of the

significant modifications include adding a ground shield in 1953, adding a new 69 kV bay in 1957, and adding a breaker to a 12 kV line in 1991.

The eleventh drawing, CE-MAG1-21.1-4, shows Sections – Electrical Arrangement at the subject substation. It was originally dated 1965 and shows six revisions from 1969 to 1978. The significant revision is the addition of a 6000 KVAR capacitor bank in 1969.

The twelfth drawing, CE-MAG1-21.1-5, shows Elevations – Electrical Arrangements and was originally dated 1972. There is a revision dated 1974. The drawing shows the addition of a 1200 Amp 14.4 kV oil circuit breaker.

The thirteenth drawing, AE-MAG1-21.1-6, shows Section “T-T” Electrical Arrangement of the subject substation. This drawing originally dated 1991 has two revisions dated 1991 and 1992. This drawing appears to show the addition of a SCADA system to the substation and the associated communication additions needed.

The fourteenth drawing, CE-MAG1-22.1, shows Anchor Bolt Plan and Foundation Loading for the subject substation. This drawing is originally dated 1952 and contains four revisions from 1952 to 1957. Some of the significant modifications include the addition of a new 69 kV bay in 1957.

The fifteenth and sixteenth drawings, CE-MAG1-22.2-1 and CE-MAG1-22.2-2, show Section Plans – Steel Erection for the subject substation. Both of these drawings are originally dated 1952 and both contain three revisions dated from 1952 to 1957. The most significant revision is the addition of a new 69 kV bay (circuit) in 1957.

The seventeenth drawing, CE-MAG1-22.2-3, originally dated 1952, shows Elevations – Steel Erection for the subject substation. This drawing shows four revisions dated 1952 through 1961, the most significant of which is the addition of a new 69 kV bay (Elevations G-G and H-H) dated 1957.

The eighteenth and nineteenth drawings, CE-MAG1-22.2-4 and CE-MAG1-22.2-5, both originally dated 1952, shows Elevations – Steel Erection. Both drawings have three revisions each dated from 1952 to 1962. The most significant modification is the addition of a new 69 kV bay in 1957.

The twentieth drawing, AE-MAG1-28.1, shows Equipment Arrangement Electric Telemeter Cabinet dated 1991 and shows one revision dated 1992. This drawing shows data acquisition equipment layout.

The 21st drawing, CE-MAG1-51.2, shows the three line wiring diagram for the subject substation and is originally dated 1958. This drawing shows 17 revisions dated from 1960 to 1992. Some of the more significant modifications show the addition of a 3000 KVAR capacitor bank in 1961, the addition of Transformer #2 on March 16, 1965, the addition of a 3000 KVAR capacitor bank in 1969, the replacement of Transformer #2 in 1976 and the addition of a vacuum circuit breaker in 1991. Each of these significant modifications increased the capacity of the Texas Substation.

The 22nd drawing, CE-MAG1-52.1-2, shows the wiring diagram – 12 kV metering cabinet – Transformer #2 for the subject substation. This drawing was originally dated 1964 and has two revisions dated 1984 and 1994.

The 23rd drawing, AE-MAG1-52.1-3, shows the wiring and schematic diagrams. A.C. distribution cabinets originally dated 1965. It also contains four revisions dated 1965 to 1991.

The 24th drawing, CE-MAG1-52.2, shows OCB mechanism wiring diagram (OCB B100) and is originally dated 1972. This drawing shows three revisions and generally shows the installation wiring diagram for a 1200 Amp Allis Chambers oil circuit breaker B100.

The 25th drawing, CE-MAG1-52.3, shows an OCB mechanism wiring diagram for circuit 131. This drawing is dated 1962 and has three revisions.

The 26th drawing, CE-MAG1-52.4, shows an OCB mechanism wiring diagram for circuit 132. This drawing is originally dated 1962 and contains three revisions.

The 27th drawing, CE-MAG1-52.5, shows a central wiring diagram 69 kV capacitor bank and is dated 1969. This drawing has three revisions dated 1971 through 1976.

The 28th drawing, CE-MAG1-52.6, shows OCB mechanism wiring diagram low side OCB B200 and is dated 1972. This drawing contains 10 revisions dated from 1966 to 1978.

The 29th drawing, CE-MAG1-52.7X, shows VCB 130 mechanism wiring diagram and is dated 1991. This drawing is for a GE type PVDB1, 1200 Amp vacuum circuit breaker that was installed in 1991.

The 30th drawing, CE-MAG1-53.1, shows the front view and wiring diagram for relay panel and potential schematic dated 1972. This drawing has been revised once in 1974.

The 31st drawing, CE-MAG1-54.1, shows control schematic diagram for a 69 kV capacitor bank #1 switch C691 dated 1969. This drawing has five revisions dated 1971 through 1977.

The 32nd drawing, CE-MAG1-54.2, shows schematic diagram VC3 130 dated 1991. This drawing shows two revisions dated 1992 through 2004.

The 33rd drawing, E-MAG1-58.1, shows the wiring diagram, electric RTU and telemeter cabinets and is dated 1991. It contains two revisions dated 1992 and 2004.

The 34th drawing, E-MAG1-58.2, shows the wiring and schematic diagram – UPS system dated 1991 and contains two revisions dated 1992 and 2004.

Additionally, based upon the Illinois Power Company drawing list for the Magnolia-Texas Substation dated November 24, 1974, there are drawings listed that I do not have. These are listed as follows:

AE-MAG1-55.1-1 through AE-MAG1-55.1-10 inclusive (10 drawings)

AE-MAG1-91.1 through AE-MAG1-91.8 inclusive (8 drawings)

I do have a listing of the 55.1-1 drawings furnished by AmerenIP that list these drawings as Substation Cable Routing System.

In the substation currently are three single phase transformers, Wagner brand 3333 KVA each with serial numbers C9C1030, C9C1031, and C9C1029. The IP representative informed us they were of 1948 vintage but it was unknown when these transformers were first installed with Texas Substation. These transformers were tested in July 22, 1965 at the Texas substation according to the Doble reports I received. The installation of the new three phase transformer caused extensive modification to the substation in 1978. The new three phase transformer was a Westinghouse brand serial # PGR-51281 (10/12/14 MVA) with a date of manufacture stamped into the name plate of 1969. This transformer was installed in October 3, 1978. Additionally, the following modifications were documented to have been completed:

1. Illinois Power Company installed a 69 kV line bay addition per Work Order 25734 in August 1957. This addition references drawing AE-MAG1-91.3.
2. Illinois Power Company added cooling fans to the 3-3333 kVA transformer bank in 1964 per Work Order 26705.
3. Illinois Power Company added a 3Ø-5000 kVA transformer to the Texas Substation in May 1965 per Work Order 26936. Also added were power fuses, metering, 69 kV airbreak switch, buss work, etc.
4. Illinois Power Company changed the tap on the transformer from Position A (69300/7200 V.) to Position B (67650/7200 V.) in 1967. This is usually done to

offset voltage drop in the existing transmission line due to increased loading. This is indicative of additional load being added to the transmission line at the Texas Substation and possibly other locations.

5. Illinois Power Company installed a switch tower (69 kV type PF-2) disconnect switch per Joslyn Co. – Hi-Voltage Equipment Division drawing 3085C0233 dated February 1, 1968. This was probably done in conjunction with doubling the size of the substation.
6. Illinois Power Company installed a 12 kV 3000 KVAR capacitor bank in the Texas Substation per Work Order 26374 in October 26, 1961 and referenced drawing #AE-MAG1-91.4.
7. Illinois Power Company purchased a 6000 KVAR capacitor bank on the 69 KV high side in December 1970 per Work Order #25860 and installed this 69 kV – 10,800/6000 T-KVAR capacitor bank per Work Order #25860 for the Texas Substation in April 1971. Also installed at this time were automatic controls and motor operated switches. High voltage switched capacitors are typically added to correct the excessive voltage drop on transmission circuits. Voltage drop in general is the result of adding load to a transmission supplied substation. When the added load becomes significant enough, then excessive voltage drop occurs and corrective action, like adding a switched capacitor bank, becomes necessary to fix the problem.
8. Illinois Power Company added a 15 kV oil circuit breaker to protect Transformer #2 in 1973 per Work Order 26727. This work order references drawing AE-MAG1-91.8. The buss work had to be changed to accommodate this OCB.
9. In October 1974, Illinois Power Company installed a number of high side lightning arrestors as well as a number of low side lightning arrestors along with a GE Oil Blast Circuit breaker type FKD. With associated relays, amp meters, and

disconnect switch per the starting notice dated above but containing no work order number.

10. Illinois Power Company installed a 15 KV oil blast circuit breaker rated at 1200 Amps along with associated relays, meters, lightning arrestors, cabinets, etc. in October 1974.
11. The drawing list for the Magnolia Texas Substation dated November 24, 1974 shows 49 unique drawing that are shown to be drawn from 1952 to 1974 concerning modifications, additions, etc. to this substation as listed above.
12. In June 1976, Illinois Power Company installed 48-100 KVAR capacitors and an associated time switch on the low side of the Texas Substation per Work Orders #851-25334 and #851-65334 and referenced drawing AE-MAG1-91.9.
13. On November 18, 1976, Illinois Power Company installed two sets of current transformer per Work Order #25334-65334 in the Texas Substation.
14. Illinois Power Company, per Work Order #851-25401 and Work Order #851-65401, installed a 3Ø - 10/11.2/14 MVA Westinghouse transformer, associated current transformers lightning arrestors and fuses after removing a Wagner 3Ø - 6250 KVA transformer, current transformers and power fuses. These Work Orders were dated October 3, 1978 and referenced drawing AE-MAG1-91.10. This addition added kVA capacity to the substation
15. In 1988, Illinois Power Company added 3-600 Amp hook stick disconnect switches per Work Order # (851)27317.
16. Illinois Power installed a remote load control device for interruptible customer load power their Work Order #25328 in May 1991.

17. Illinois Power Company modified the foundations at the Texas Substation per Work Order #25626-F in June 1991.
18. The Texas Substation provides service to the Citation Oil switching structure that sits adjacent to but outside the fence from the Texas Substation. The service to Citation Oil switching structure/metering point is furnished via a large conductor overhead circuit from the Texas Substation. This circuit is protected by a General Electric Power/Vac breaker serial #0347A4170-001-01 type PVDB1 with a manufacturing date of July 1991 per the nametag information. This breaker is rated at 1200 amps continuous.
19. In August 1996, Illinois Power Company developed a cost estimate to rebuild the existing 12 KV switching structure, install a new 12 KV switching structure, and replace the GE ACR reclosing relays. This estimate was apparently provided to Texas Oil from Illinois Power Company.
20. Illinois Power Company added a 15 kV breaker and metering to the Texas Substation per Work Order 25676 in 1991.
21. Illinois Power Company replaced the 3Ø, voltage regulator at the Texas Substation with 6-1Ø, 167 kVA voltage regulators per Work Order 26299 in May 2003.

Based upon my personal examination of the Texas Substation and my analysis of the documents that I have received concerning the Texas Substation, it is easy to see that this substation has been extensively modified over the years that it has been in existence. Since Ameren IP did not supply any costs to me concerning these upgrades, it is difficult to estimate these costs after the fact. However, due to the extensive upgrades and modifications that I have observed, and based upon my experience as an electrical engineer engaged in the design and construction of electrical facilities including substations, it would be my opinion based upon a reasonable degree of engineering certainty that Ameren IP has spent from \$500,000 to \$1 million

or more on the modifications to this substation over its life to serve existing and new load out of this substation.

In April 2005, Mr. Clyde Finch of Citation Oil & Gas Corporation sent a FAX to Mr. Mike Tatlock of Illinois Power informing him that they were adding the New Salem gas plant and the average additional load was going to be 583 kW plus 8-100 HP compressor motors distributed throughout the oil field. Mr. Finch wanted to know if the local Illinois Power Substation has ample capacity to handle these new electrical loads.

After examining the spreadsheets that were attached to the FAX, it shows the Estimated Total connected Load to be 801.9 kW, not including the 8 new compressors.

Mr. Tatlock forwarded the motor load information for the New Salem Gas Plant onto Mr. David Tockstein, an electric planning engineer at Illinois Power, and asked him to look at the loading and voltage flicker situation. Mr. Tockstein's April 20, 2005 e-mail is attached. He says that the additional loading and flicker calculations are fine.

Subsequent discovery has failed to yield the original information Mr. Tockstein did in his analysis. A blank (template) motor starting voltage flicker calculation worksheet in Excel has been produced, but it contained no data. Also produced is the Illinois Power Company flicker curve used in this evaluation.

In my opinion, the analysis Mr. Tockstein did was incomplete and totally undocumented. He should have obtained the impedance of the distribution line and transformer at the New Salem Gas Plant and advised the customer of the resulting voltage flicker from starting a 250 HP motor across the line or given the Texas Substation source impedance at 12 kV to Citation Oil and recommended that they conduct their own flicker study. Apparently he did neither.

One interesting item in Mr. Tatlock's April 20th e-mail is the sentence that says "I told him (Mr. Clyde Finch of Citation Oil) that if he moved between a 1/4 and 1/2 mile north of Green St. they would get back in our territory." It is obvious that the New Salem Gas Plant as

originally proposed was in Tri-County Electric Cooperative's service territory and the Illinois Power engineers knew it. Interestingly, the Citation Oil Company office is several hundred yards north of the gas plant location and Tri-County Electric Cooperative is providing service to this office. Also you can observe from the territorial exhibit that 7 out of 8 gas wells providing the gas to the new plant are in Tri-County Electric Cooperative's service territory also.

Furthermore, in examining and reading the Service Area Agreement between Illinois Power Company and Tri-County Electric Cooperative, Inc., dated March 18, 1968, I find the following:

1. The Texas Substation and the Citation switching structures are located in Tri-County EC's territory.
2. Based upon Section 1(c) a new customer is a customer who needs service at a point of delivery that is idle or not energized. If the required point of delivery doesn't exist, then it is not energized, so in general, a new customer requires a new delivery point and, if you need a new delivery point, you are a new customer.
3. Based upon Section 3(a) ... neither party shall serve a new customer within the service areas of the other party.
4. IP contends its point of delivery to the Citation Oil Company gas plant is the Texas Substation. Section 1(d) "any modification to that substation where additional phase or phases of electric current are added shall be deemed to create a new point of delivery." Therefore, based upon the vast number of modifications shown in the IP drawings of the Texas Substation, many new delivery points were created over time.
5. Apparently Illinois Power Company is taking the stance that they can serve Citation Oil at the Texas Substation and that Citation Oil can build their own line anywhere they wish into anyone else's territory and thus serve "their own" loads. Such action is in violation of Section 3(a) and Section 1(c). The word "serve" in the electric industry means provide electric energy. The electric energy that Citation Oil is using to serve "their own" loads is coming from Illinois Power Company. Illinois Power Company is therefore in violation of the existing

agreement and has been each time it provided service to a new delivery point and thus a new customer located in the Tri-County Electric Cooperative service area since 1968.

CONCLUSIONS AND OPINIONS

The gasification plant was not in existence and was therefore not energized at the time the Service Area Agreement was entered into. The gasification plant required a new service connection point which consists of a 3Ø pad mounted transformer, fuse protection, riser pole, metering equipment, lightning arrestors, service conductor, underground primary at 12,470 volts and a low side voltage of 277/480 volts and thus is a new delivery point under Section 1(d) which created a "New Customer" per Section 1(c). Furthermore, it appears that seven (7) of the eight (8) new wells feeding the gasification plant are also in Tri-County EC Service Territory as negotiated in the 1968 Service Area Agreement. Each one required an overhead bank of three transformers, fuses, cutouts, pole(s), service wires, guys and anchors, metering equipment, and was not in existence nor energized on March 18, 1968 and are therefore new customers. Additionally, even if we assume IP's contention that the Texas Substation is the "delivery point" for the new gas plant and the 8 new feeder wells for the gas plant, the Texas Substation has been modified very extensively with the addition of a new 3Ø, Power Transformer, the addition and modification of the high side and low side bus work in the substation, and other extensive modifications/additions as outlined above added additional phases of electric current to the substation and is therefore a "modification" per the agreement.

In my opinion, the new gasification plant owned by Citation Oil and its partners is a "new electrical load" that did not exist at the time of the 1968 Service Agreement, and the new plant and new connection point are clearly required for this new electrical load that needs a "new delivery point" and this new electrical load is clearly in Tri-County EC service territory and therefore should have been served by Tri-County EC. If the gasification plant had been served by the Tri-County EC, it would have taken approximately 250 feet of three phase 7.2/12.47 kV underground cable, a new distribution pad mounted transformer, and a new meter, and service conductors. Allowing Tri-County EC to serve this new delivery point would have eliminated

duplication of facilities, hopefully minimized a dispute, provided a vastly more efficient way to serve this new consumer and would have avoided unnecessary inconvenience.

In my opinion, Ameren IP is, therefore, in violation of the agreement because it has defined, marked the territorial outline, and agreed to the territorial boundary, but is serving (i.e., providing electric energy) outside the delineated area by using a proxy, i.e., Citation Oil. Such behavior violates the spirit and the Letter of the Agreement.

Further investigation and discovery is ongoing and I, therefore, reserve the right to alter, amend, or change my opinion if and when additional information becomes available.

Respectfully submitted,

A handwritten signature in cursive script that reads "Robert C. Dew, Jr." The signature is written in black ink and is positioned above the typed name.

Robert C. Dew, Jr., PE
Illinois Professional Engineer #062-043005

E20A.DWG1ST00

ILLINOIS POWER COMPANY

11/24/74

DRAWING LIST

AE-MAG1-91.1

FOR
MAGNOLIA TEXAS SUBSTATION

SHEET 1

DRAWING STATUS CODES

C - RECORD DR AS BUILT C - TO BE CANCELLED
 X - PREPARED FOR CONSTRUCTION U - UNKNOWN AT THIS TIME
 N - UNFINISHED NEW DRAWING R - REPLACED BY ANOTHER WITH THE SAME NUMBER

--*-- IN LAST COLUMN INDICATES
 NO ABBREVIATED TITLE RECORDED.

DRAWING LOCATION CODES

V - DRAWING FILE M - MICROFILM FILE C - CONSULTANT FILE L - LOST

DRAWING NUMBER	REVISION NO.	DATE	LOCATION	STATUS	TITLE	
00 PROPERTY & ARRANGEMENT						
CE-MAG1-03.1	13	09/12/74	G	VM	GENERAL LOCATION PLAN & SINGLE LINE WIRING DIAGRAM	
CE-MAG1-04.1	04	09/26/72	L	VM	GRADING & DRAINAGE PLAN	
10 YARD - SUBSTRUCTURE						
CE-MAG1-11.1	07	09/20/72	U	VM	FOUNDATION PLAN	*
CE-MAG1-11.2	03	01/09/57	U	VM	FOUNDATION DETAILS	*
AE-MAG1-11.3	00	10/25/61	U	VM	FOUNDATION DETAILS-CAPACITOR BANK	*
AE-MAG1-11.4	00	03/09/65	U	VM	FOUNDATION DETAIL F1-TRANSFORMER	*
AE-MAG1-11.5	00	03/05/65	U	VM	FOUNDATION DETAIL F2-C.T. STAND	*
AE-MAG1-11.6	00	02/24/69	C	VM	FOUNDATION DETAIL F3 - VACUUM SWITCH	*
AE-MAG1-11.7	00	02/24/69	U	VM	FOUNDATION DETAIL F4-CAPACITOR BANK	*
CE-MAG1-12.1	10	09/20/72	U	VM	LIGHTING & GROUNDING LAYOUT AND DETAILS	
20 YARD - SUPERSTRUCTURE						
CE-MAG1-21.1-1	11	09/12/74	C	VM	PLAN-ELECTRICAL ARRANGEMENT	
CE-MAG1-21.1-2	10	09/12/74	C	VM	SECTIONS-ELECTRICAL ARRANGEMENT	
CE-MAG1-21.1-3	04	01/10/57	U	VM	SECTIONS-ELECTRICAL ARRANGEMENT	
CE-MAG1-21.1-4	02	07/22/70	U	VM	SECTIONS-ELECTRICAL ARRANGEMENT	
CE-MAG1-21.1-5	01	09/12/74	C	VM	ELEVATIONS-ELECTRICAL ARRANGEMENT	
CE-MAG1-22.1	04	01/10/57	U	VM	ANCHOR BOLT PLAN & FOUNDATION LOADING	
CE-MAG1-22.2-1	03	01/10/57	U	VM	SECTION PLANS-STEEL ERECTION	
CE-MAG1-22.2-2	03	01/11/57	U	VM	SECTION PLANS-STEEL ERECTION	
CE-MAG1-22.2-3	04	10/27/61	U	VM	ELEVATIONS-STEEL ERECTION	
CE-MAG1-22.2-4	03	10/27/61	U	VM	ELEVATIONS-STEEL ERECTION	
CE-MAG1-22.2-5	03	11/27/52	U	VM	DETAILS & SECTION AND REACTOR SUPPORT-STEEL ERECTION	
30 BUILDING - SUBSTRUCTURE						
50 ELECTRICAL						
CE-MAG1-52.2	09	09/12/74	C	VM	THREE LINE WIRING DIAGRAM	
CE-MAG1-52.1-1	05	10/18/72	U	VM	WIRING & CONDUIT DIAGRAMS-12KV BANK #1 METERING	
CE-MAG1-52.1-2	00	03/25/65	U	VM	WIRING & CONDUIT DIAGRAMS-12KV TRANSF. #2 METERING	

E20A. DWGLST00

ILLINOIS POWER COMPANY

11/24/74

DRAWING LIST

AE-MAG1-91.1

FOR

SHEET 2

MAGNOLIA TEXAS SUBSTATION

DRAWING NUMBER	REVISION NO.	DATE	LOCATION STATUS	TITLE	
AE-MAG1-52.1-3 ✓	03	10/17/72	U VM	WIRING & SCHEMATIC DIAGRAMS-A.C. DISTRIBUTION CABINET	
CE-MAG1-52.2 ✓	02	09/15/74	O VM	OCB MECHANISM WIRING DIAGRAM-A.C. OZ-210, 14.4KV, 1200A-69/12KV BANK #1 L.S. OCB 8100	
CE-MAG1-52.3 ✓	02	09/12/74	O VM	OCB MECHANISM WIRING DIAGRAM-A.C. OZ-210, 14.4KV, 600A-12KV DIST. CKT. 131	
CE-MAG1-52.4 ✓	02	09/13/74	O VM	OCB MECHANISM WIRING DIAGRAM-A.C. OZ-210, 14.4KV, 600A-12KV DIST. CKT. 132	
CE-MAG1-52.5 ✓	01	06/08/71	U VM	WIRING DIAGRAM-CONTROL FOR 69KV CAPACITOR BANK	
CE-MAG1-52.6 ✓	01	09/16/74	C VM	OCB MECHANISM WIRING DIAGRAM-G.E. FKO-14.4-250-3, 14.4KV, 600A.-LGH SIDE OCB B20	
CE-MAG1-53.1 ✓	01	09/16/74	O VM	FRONT VIEW & WIRING DIAGRAM-RELAY PANEL & POTENTIAL SCHEMATIC	
CE-MAG1-54.1 ✓	01	06/08/71	U VM	SCHEMATIC DIAGRAM-CONTROL-69KV CAPACITOR BANK	
AE-MAG1-55.1-1	00	07/29/52	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-2	01	03/17/65	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-3	00	07/10/52	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-4	02	03/17/65	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-5	00	07/10/52	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-6	00	07/10/52	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-7	01	02/06/73	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-8	00	07/10/52	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-9	05	01/30/73	U VM	CIRCUIT & CONDUIT LIST	*
AE-MAG1-55.1-10	00	11/29/72	U VM	CIRCUIT & CONDUIT LIST	*
90	ELECTRIC - MISCELLANEOUS				
AE-MAG1-91.1		11/24/74	O V	DRAWING LIST	*
AE-MAG1-91.2	**	**/**/**	O M	B/M-W.D. 1931-580-INSTALL 69/12KV SUB	*
AE-MAG1-91.3	**	**/**/**	O M	B/M-W.D. 25734-INSTALL 69KV LINE BAY ADDITION	*
AE-MAG1-91.4	**	**/**/**	C M	B/M-W.D. 26374-INSTALL 3000 KVAR CAPACITOR BANK	*
AE-MAG1-91.5	**	**/**/**	C M	B/M-W.D. 26705-ADD FANS TO 69/12KV BANK	*
AE-MAG1-91.6	**	**/**/**	O M	B/M-W.D. 26936-ADD A 7000 KVA, 69/12KV TRANSF.	*
AE-MAG1-91.7	**	**/**/**	C M	B/M-W.D. 25860-INSTALL 6 MVAR 69KV SWITCHED CAPACITOR BANK	*
AE-MAG1-91.8	**	**/**/**	C M	B/M-W.D. 26727-INSTALL 15KV OCB TO PROTECT TRANS. #2	*

C = to be cancelled

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