In reviewing this table, it is important to note the land use impacts along the portions of each route adjacent to roads and road allowances and collocated with existing transmission lines are largely mitigated relative to impacts that occur along portions of each route adjacent to quarter and section lines. This is because, as I have previously noted, not all quarter and section lines contain existing linear disturbances. For example, 5 ha of impact on cultivated land along an existing developed road allowance does not necessarily have the same adverse impact as 5 ha of impact along a quarter line that does not have an existing linear disturbance.

In general, the BAI routes trade closer placement to residences for collocation with existing distribution lines adjacent to existing developed road allowances. Collocation helps to mitigate the visual impacts of the new transmission line as the new transmission line will be put in place of existing distribution lines. In addition, due to the expected magnetic field level for the proposed transmission line at 30 to 35 meters from the right-of-way centerline being no more than that of a typical single-phase 240 kV transmission line at 150 meters from the right-of-way centerline, any prudent avoidance of magnetic fields that the Commission may wish to consider can be achieved by avoiding selection of Route BAI-2, which is the only proposed BAI route with residences within 50 meters of the centerline of the proposed transmission line.

I recommend the Commission give serious consideration to the selection of Routes BAI-1 or BAI-3 over ATCO's preferred East Route, alternate West Route and rejected Route A. These two BAI routes make much better use of existing linear disturbances and do not place a residence closer than approximately 49 meters to the edge of the right-of-way[5] of the proposed transmission line -- a reasonable

[5]Approximately 58 meters to the centerline of the proposed transmission line.

distance considering the visual impact mitigation afforded by collocation with existing distribution lines and the low expected magnetic field level from the proposed transmission line. I would note that despite Route BAI-1 being located on the west side of the Dodds' property in NW-17-60-19-W4M and the edge of the right-of-way of Route BAI-3 being located approximately 77 meters from the Dodds' residence in NE-17-60-19-W4M, the Dodds support the selection of Route BAI-1 or BAI-3 over ATCO's preferred East Route and alternate West Route because these two BAI routes avoid the bisection of their agricultural property of NW-17-60-19-W4M and NE-17-60-19-W4M.

If despite my recommendation, the Commission chooses not to select Route BAI-1 or BAI-3, I recommend it consider selection of Route BAI-4, ATCO's alternate West Route 2 or ATCO's rejected Routes B, C, or D. All of these routes would also address the concerns of the Dodds provided any use of Node A5 to Node Y5 runs south of the access road it parallels.

Q DOES THIS CONCLUDE YOUR EVIDENCE?

A Yes, it does.

Qualifications of James R. Dauphinais

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017, USA.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I graduated from Hartford State Technical College in 1983 with an Associate's Degree in Electrical Engineering Technology. Subsequent to graduation I was employed by the Transmission Planning Department of the Northeast Utilities Service Company as an Engineering Technician.

While employed as an Engineering Technician, I completed undergraduate studies at the University of Hartford. I graduated in 1990 with a Bachelor's Degree in Electrical Engineering. Subsequent to graduation, I was promoted to the position of Associate Engineer. Between 1993 and 1994, I completed graduate level courses in the study of power system transients and power system protection through the Engineering Outreach Program of the University of Idaho. By 1996 I had been promoted to the position of Senior Engineer.

In the employment of the Northeast Utilities Service Company, I was responsible for conducting thermal, voltage and stability analyses of the Northeast Utilities' transmission system to support planning and operating decisions. This

involved the use of load flow and power system stability computer simulations. Among the most notable achievements I had in this area include the solution of a transient stability problem near Millstone Nuclear Power Station, and the solution of a small signal (or dynamic) stability problem near Seabrook Nuclear Power Station. In 1993 I was awarded the Chairman's Award, Northeast Utilities' highest employee award, for my work involving stability analysis in the vicinity of Millstone Nuclear Power Station.

From 1990 to 1997 I represented Northeast Utilities on the New England Power Pool Stability Task Force. I also represented Northeast Utilities on several other technical working groups within the New England Power Pool ("NEPOOL") and the Northeast Power Coordinating Council ("NPCC"), including the 1992-1996 New York-New England Transmission Working Group, the Southeastern Massachusetts/Rhode Island Transmission Working Group, the NPCC CPSS-2 Working Group on Extreme Disturbances and the NPCC SS-38 Working Group on Interarea Dynamic Analysis. This latter working group also included participation from a number of ECAR, PJM and VACAR utilities.

In addition to my technical responsibilities, I was also responsible for oversight of the day-to-day administration of Northeast Utilities' Open Access Transmission Tariff. This included the creation of Northeast Utilities' pre-FERC Order No. 889 transmission electronic bulletin board and the coordination of Northeast Utilities' transmission tariff filings prior to and after the issuance of Federal Energy Regulatory Commission ("FERC" or "Commission") FERC Order No. 888. I was also responsible for spearheading the implementation of Northeast Utilities' Open Access Same-Time Information System and Northeast Utilities' Standard of Conduct under FERC Order No. 889. During this time I represented Northeast Utilities on the Federal Energy

Regulatory Commission's "What" Working Group on Real-Time Information Networks. Later I served as Vice Chairman of the NEPOOL OASIS Working Group and Co-Chair of the Joint Transmission Services Information Network Functional Process Committee. I also served for a brief time on the Electric Power Research Institute facilitated "How" Working Group on OASIS and the North American Electric Reliability Council facilitated Commercial Practices Working Group.

In 1997 I joined the firm of Brubaker & Associates, Inc. The firm includes consultants with backgrounds in accounting, engineering, economics, mathematics, computer science and business. Since my employment with the firm, I have filed or presented testimony before the Federal Energy Regulatory Commission in Consumers Energy Company, Docket No. OA96-77-000, Midwest Independent Transmission System Operator, Inc., Docket No. ER98-1438-000, Montana Power Company, Docket No. ER98-2382-000, Inquiry Concerning the Commission's Policy on Independent System Operators, Docket No. PL98-5-003, SkyGen Energy LLC v. Southern Company Services, Inc., Docket No. EL00-77-000, Alliance Companies, et al., Docket No. EL02-65-000, et al., Entergy Services, Inc., Docket No. ER01-2201-000, and Remedying Undue Discrimination through Open Access Transmission Service, Standard Electricity Market Design, Docket No. RM01-12-000 and NorthWestern Corporation, Docket No. ER10-1138-000. I have also filed or presented testimony before the Alberta Utilities Commission, Colorado Public Utilities Commission, Connecticut Department of Public Utility Control, Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the Louisiana Public Service Commission, the Michigan Public Service Commission, the Missouri Public Service Commission, the Montana Public Service Commission, the Public Utility Commission of Texas, the

Wisconsin Public Service Commission and various committees of the Missouri State Legislature. This testimony has been given regarding a wide variety of issues including, but not limited to, avoided cost calculations, certification of public convenience and necessity, fuel adjustment clauses, interruptible rates, market power, market structure, prudency, resource planning, standby rates, transmission losses, transmission planning and transmission line routing.

I have also participated on behalf of clients in the Southwest Power Pool Congestion Management System Working Group, the Alliance Market Development Advisory Group and several working groups of the Midwest Independent Transmission System Operator, Inc. ("MISO"), including the Congestion Management Working Group. I am currently an alternate member of the MISO Advisory Committee in the end-use customer sector on behalf of a group of industrial end-use customers in Illinois. I am also the past Chairman of the Issues/Solutions Subgroup of the MISO Revenue Sufficiency Guarantee ("RSG") Task Force.

In 2009, I completed the University of Wisconsin-Madison High Voltage Direct Current ("HVDC") Transmission course for Planners that was sponsored by MISO. I am a member of the Power and Energy Society ("PES") of the Institute of Electrical and Electronics Engineers ("IEEE").

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

BEFORE THE

THE ALBERTA UTILITIES COMMISSION

Re: ATCO Electric's: Application: Proposal Eastern Alberta Transmission Line (EATL) Project	)	**Application 1607153 / Proceeding ID 1069**

Evidence of

James R. Dauphinais

On behalf of

North Bruderheim Group

Project 9475
May 11, 2012

BRUBAKER & ASSOCIATES, INC.
CHESTERFIELD, MO 63017

BEFORE THE

THE ALBERTA UTILITIES COMMISSION

Re: ATCO Electric's: Application: Proposal Eastern Alberta Transmission Line (EATL) Project	**Application 1607153 / Proceeding ID 1069**

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BEFORE THE

THE ALBERTA UTILITIES COMMISSION

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Evidence of James R. Dauphinais

I. Introduction

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and Principal of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I have earned a Bachelor of Science in Electrical Engineering from the University of Hartford and have completed a number of graduate level courses in electric power systems through the Engineering Outreach Program of the University of Idaho. In the twelve and one-half years prior to the beginning of my current employment with BAI, I was employed in the Transmission Resource Planning Department of the Northeast Utilities Service Company. Since my employment with BAI in 1997, I have testified before the Federal Energy Regulatory Commission and many state commissions on a

wide variety of issues including, but not limited to, avoided cost calculations, certification of public convenience and necessity, fuel adjustment clauses, interruptible rates, market power, market structure, prudency, resource planning, standby rates, transmission rates, transmission line routing, transmission losses, and transmission planning. I have also testified in the past before the Alberta Utilities Commission ("AUC" or "Commission") regarding transmission line routing issues. Finally, I have assisted end-use customers with power procurement and a variety of clients in regard to transmission access issues. My background is further detailed in Appendix A to my evidence.

Q PLEASE IDENTIFY THE MATTERS WHERE IN THE PAST YOU FILED EVIDENCE OR TESTIMONY REGARDING TRANSMISSION LINE ROUTING.

A I have in the past filed transmission line routing evidence or testimony in the following matters:

Jurisdiction	Applicant	Docket/Proceeding No.
PUCT[1]	Oncor Electric Delivery Company	37464
PUCT	LCRA Transmission Service Corporation	37778
PUCT	Oncor Electric Delivery Company	38140
PUCT	Lone Star Transmission, LLC	38230
PUCT	Sharyland Utilities, L.P.	38290
PUCT	Oncor Electric Delivery Company	38324
PUCT	LCRA Transmission Services Corporation	38354
PUCT	Oncor Electric Delivery Company	38597
MPSC[2]	International Transmission Company	U-16200
AUC[3]	AltaLink Management Ltd.	979
AUC	ATCO Electric	1363

[1]Public Utility Commission of Texas
[2]Michigan Public Service Commission
[3]Alberta Utilities Commission

Q ON WHOSE BEHALF ARE YOU PROVIDING EVIDENCE IN THIS PROCEEDING?

A I am providing evidence on behalf of North Bruderheim Group. North Bruderheim Group is a group of landowners with lands and/or residences in the area north of Bruderheim ("North Bruderheim Area") along or near ATCO's Current Preferred Route and Previous Preferred Route for its proposed Eastern Alberta Transmission Line ("EATL") project from Node CDi23 to Node CD32c (more precisely, in the area from Node CDi23 to Node CD30 – north and northwest of Bruderheim). The name, location of lands and proximity to the EATL Current Preferred Route and Previous Preferred Route from Node CDi23 to Node CD32c for each of the members of North Bruderheim Group is summarized in Table JRD-NBG-1.

TABLE JRD-NBG-1

Name	Location of Lands	Nearest Proximity of Residence to Current Preferred Route Centre Line (meters)	Nearest Proximity of Land to Current Preferred Route Centre Line (meters)	Nearest Proximity Residence to Previous Preferred Route Centre Line (meters)	Nearest Proximity of Land to Previous Preferred Route Centre Line (meters)
Corey & Bernadette Clifton, Gregory Serink	SE-24-56-21-W4M	N/A	0	N/A	0
Bernadette Clifton	SE-25-56-21-W4M	N/A	850	N/A	1200
Corey & Bernadette Clifton	NE-18-56-20-W4M	N/A	750	N/A	473
Garnett Frey	SE-20-56-20-W4M	N/A	0	N/A	0
	SE 8-56-20-W4M	N/A	3100	N/A	3100
	NE 8-56-20-W4M	N/A	2300	N/A	2300
	NE-17-56-20-W4M	N/A	620	N/A	620
Daniel Hopkins	SE-19-56-20-W4M	540	0	490	0
Reinhold Prochnau	SW-24-56-21-W4M	N/A	0	N/A	0
Gregory Serink	SW-19-56-20-W5M	700	0	377	0
	NE-24-56-21-W4M	N/A	50	N/A	400

Source: ATCO Response to Information Request NBG-ATCO-30,ATCO Response to Information Request NBG-ATCO-29

As can be seen from Table JRD-NBG-1, two (2) members of the North Bruderheim Group have residences within 800 m of the centre line of the CDi23 to CD32c Current Preferred Route and Previous Preferred Route Segments and five (5) members of the North Bruderheim Group have land over which the Right-of-Way ("ROW") of the CDi23 to CD32c Current Preferred Route and Previous Preferred Route Segments would cross (due to those lands being located within 0 meters of the centre line of those route segments).

While the members of North Bruderheim Group appreciate ATCO's modifications to its Previous Preferred Route to create its Current Preferred Route (a route option that more closely parallels an existing nearby 240 kV Alternating Current ("AC") transmission line in the North Bruderheim Area), those modifications do not go far enough to address the concerns of the North Bruderheim Group and do not provide an alternative route option for the Commission that is located away from the lands of greatest concern and residences of the North Bruderheim Group. Furthermore, the North Bruderheim Group is still very concerned that the Previous Preferred Route could be ultimately selected as part of the route for the EATL project since ATCO continues to include the CDi23 to CD32c Previous Preferred Route Segment as one of its filed alternative routes in this proceeding. It is the position of the members of North Bruderheim Group that ATCO has not adequately addressed their concerns with the CDi23 to CD32c Current Preferred Route and Previous Preferred Route Segments during the consultation process for the EATL project.

Q WHAT IS THE SUBJECT MATTER OF YOUR EVIDENCE ON BEHALF OF THE NORTH BRUDERHEIM?

A My evidence on behalf of the North Bruderheim Group addresses the Application of ATCO for a permit and license to construct and operate the proposed EATL project. The EATL project consists of the following:

- Two AC/DC converter stations (Heathfield Converter Station 2029S and Newell Converter Station 2075S);
- A 500 kV High Voltage Direct Current ("HVDC") transmission line (13L50) connecting Heathfield and Newell;
- Two 500 kV Alternating Current ("AC") circuits (12L70/12L85) to connected Heathfield to Heartland;
- Four 240 kV AC circuits (1087L/923L and 1088L/1035L) to connect Newell to the existing 240 kV transmission line 923L and the proposed 240 kV transmission line 1034L/1035L, respectively;
- Modification of the existing 240 kV AC circuit 9L950 at two locations;
- A telecommunication tower at each of the two converter stations;
- An emergency backup generator at each of the two converter stations;
- One fibre-optic cable line; and
- Four optical repeater sites.

At the request of North Bruderheim Group's counsel, I evaluated the reasonableness of ATCO's filed route options (Current Preferred Route and Previous Preferred Route) for the North Bruderheim Area section (Nodes CDi23 through CD32c) of the 500 kV HVDC transmission line portion of the proposed EATL project and explored other viable route options that would fully address the concerns of the North Bruderheim Group.

I would like to note that Mr. Cliff Wallis of Cottonwood Consultants Ltd. is separately sponsoring evidence on behalf of the North Bruderheim Group regarding the environmental impacts of ATCO's proposed transmission line project.

Finally, my silence in regard to any issue should not be taken as an endorsement of any position taken by ATCO with respect to that issue.

Q CAN YOU PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS?

A I recommend against selection of ATCO's Previous Preferred Route from CDi23 to CD31. The Previous Preferred Route from CDi23 to CD31 is inferior to the Current Preferred Route and does not provide a reasonable alternative to the Current Preferred Route from CDi23 to CD31 as it has even more adverse impact on the North Bruderheim Group than the Current Preferred Route from CDi23 to CD31.

I also recommend consideration be given to selection of my proposed Routes BAI-1 and BAI-3 from Node BAI1 (just west of Node CDi23) to Node BAI4 (just west of Node CD31). Route BAI-1 would be predominantly located in an existing largely undeveloped road allowance which runs west to east one-quarter section (approximately 800 meters) north of the existing 240 kV AC transmission line in the area. Route BAI-3 would be similar to Route BAI-1 except that east of the Strathcona County – Lamont County boundary it would closely parallel the north edge of the existing west to east 240 kV transmission line and avoid bisecting the boundary between an existing and proposed natural area. While a bit inferior to ATCO's Current Preferred Route with regard to routing factors, both of these routes fully resolve the concerns of the North Bruderheim Group.

If despite my recommendation, the Commission chooses not to select either my Route BAI-1 or BAI-3, I recommend the Commission select my Route BAI-2. Route BAI-2 is a modified version of ATCO's Current Preferred Route from Node CDi23 to Node CD31. The modifications reduce the impact of the Current Preferred Route by avoiding the south and east sides of the land of North Bruderheim Group member Mr. Reinhold Prochnau in SW-24-21-W4M and adjusting the southward jog in SE-20-20-W4M to a location that has less of an adverse impact on the land of North Bruderheim Group member Mr. Garnett Frey. The modifications also improve the Current Preferred Route by increasing the close paralleling of existing significant linear disturbances at a relatively small increase in cost.

II. Route Selection Factors

Q WHAT FACTORS SHOULD BE CONSIDERED IN THE SELECTION OF A TRANSMISSION LINE ROUTE BY THE COMMISSION?

A Safety and health, cost, the impact on property owners, the impact on the environment, the impact on archeological and historic sites and the impact on aesthetics are all factors that should be considered. The transmission line route selection objectives and considerations presented in Alberta Environment's Environmental Protection Guidelines for Transmission Lines ("Alberta Environment R&R/11-03") should also be considered by the Commission. Finally, while they technically apply to ISO Needs Identification Applications rather than Transmission Line Applications, it is also appropriate to apply the agriculture impact, residential impact, environmental impact, cost, electrical consideration, visual impact and special constraints aspects of ND12 of Section 6.1 of AUC Rule 007.

Q SHOULD GREATER WEIGHT BE PLACED ON CERTAIN FACTORS VERSUS OTHERS?

A Yes. While all factors should be considered, some factors should be given more weight than others. For example, when practicable, it is desirable to route new transmission lines using existing linear developments such as road allowances, fence lines, quarter section and section lines, and existing transmission or utility corridors as outlined in Section 1.2 of Alberta Environment R&R/11-03. However, if two hypothetical alternative routes only differed in that one entirely ran along quarter lines and the other entirely ran along an existing transmission line corridor, it could not be said that the two routes have similar impacts as the existing transmission line corridor route is already impacted by existing transmission line infrastructure while the quarter line route is not likely to have been as significantly impacted by existing infrastructure. Thus, all else being equal, the route using the existing transmission line corridor would likely be a much better route for the proposed line than the one that utilized quarter lines.

As another example, if two hypothetical routes differed only in that one introduced significant health and safety concerns, but the other introduced significant aesthetic concerns, if a choice had to be made between the two lines, it is likely the route with greater aesthetic impact would be the better choice of the two routes.

Q WHEN WEIGHING THE FACTORS TO BE CONSIDERED, IS IT POSSIBLE THAT SUBSTANTIALLY BETTER PERFORMANCE WITH RESPECT TO ONE FACTOR CAN ULTIMATELY OUTWEIGH INFERIOR PERFORMANCE WITH RESPECT TO ANOTHER FACTOR?

A Yes. A hypothetical example of this would be when one route impacts a relatively small number of residences, but very little of its length runs along existing transmission line corridors. In such a circumstance, it may be appropriate to select a different route that impacts more residences if that route also significantly outperforms the other route in terms of minimizing the portion of its length that does not run along existing transmission line corridors.

III. ATCO's Route Selection Analysis

Q PLEASE DESCRIBE THE METHOD ATCO UTILIZED TO DEVELOP ITS FILED PREFERRED AND ALTERNATIVE 500 KV HVDC LINE ROUTES IN THIS PROCEEDING.

A ATCO reports that it developed general criteria that were taken into consideration through the route selection process. These criteria include:

- Minimizing impacts to other land uses such as residences, built-up area and oil and gas facilities;
- Utilizing existing linear disturbances to minimize new disturbance and clearing;
- Following existing transmission lines where practical;
- Keeping routes reasonably straight to reduce line length and avoid costly corner structures;
- Minimizing length across environmentally sensitive areas such as watercourses, recreation areas, parks, campgrounds, and sensitive wildlife habitat to the extent feasible; and

- Minimizing length through wet areas and steep slopes both for better access and to reduce environmental impacts.

ATCO then developed specific criteria from these general criteria by taking guidance from AUC Rule 007, Alberta Environment's Environmental Protection Guidelines for Electric Transmission Lines (C&R/IL/95-2), the AESO's functional specification for the project, and factors as determined by the professional judgment of its experienced planners. (ATCO Application Attachment 1 at page 65).

Q HOW DID ATCO PROCEED ONCE IT HAD DEVELOPED PRELIMINARY ROUTE OPTIONS?

A The Company selected route options in three stages: preliminary route options for initial and extended public consultation; a more detailed and refined preferred route and alternative route segments for additional consultation; and the final preferred route and alternative route segments as filed in the application.

Q HOW DID ATCO ARRIVE AT ITS FINAL CHOICE OF ITS PREFERRED ROUTE FOR THE 500 KV HVDC TRANSMISSION LINE?

A ATCO indicates that information gathered through the extended consultation process was incorporated into the metrics for the route options as well as information it collected from further aerial and ground reconnaissance. ATCO reports it conducted a final comparison of routes based on key criteria, with the greatest weight applied to routes that best avoided close proximity to residences, followed existing or other planned transmission lines, avoided routes with the greatest number of parcels where landowners had identified specific objections and concerns, and provided the greatest avoidance or separation from other constraint and development criteria where feasible (Application Attachment 1 at page 70).

IV. Route Options for the Proposed 500 kV HVDC Transmission Line in the North Bruderheim Area

Q WHAT ROUTE OPTIONS HAS ATCO FILED IN THE AREA (NODE CDi23 to NODE CD32c) FOR THE PROPOSED 500 KV HVDC TRANSMISSION LINE?

A ATCO originally only filed a single route option from Node CDi23 to CD32c. I refer to this route as ATCO's "Previous Preferred Route." Later, ATCO filed an amendment to its application under which it submitted a modified version of its Previous Preferred Route from CDi23 to CD32c. This new route option, which I refer to as ATCO's "Current Preferred Route", is the same as the Previous Proposed Route except that it much more closely parallels an existing 240 kV AC transmission line between Node CDi25s and Node CD30 than the Previous Preferred Route. In the amendment, ATCO also retained its Previous Preferred Route as an alternative route option to its Current Preferred Route.

Q IS THE CURRENT PREFERRED ROUTE FROM CDi23 TO CD32c AN IMPROVEMENT OVER THE PREVIOUS PREFERRED ROUTE?

A Yes, but it does not fully resolve the concerns of the North Bruderheim Group and does not provide an alternative route option between Node CDi23 and Node CD32c that follows a substantially different path than the Previous Preferred Route. ATCO continues to only offer route options between Node CDi23 and Node CD32c that are just south of the existing 240 kV AC transmission line in the North Bruderheim Area.

Q HAVE YOU EXAMINED OTHER POSSIBLE ROUTE OPTIONS THAT AVOID THE CURRENT PREFERRED ROUTE AND PREVIOUS PREFERRED ROUTE BETWEEN NODE CDi23 AND NODE CD32c?

A Yes. BAI first conducted an extensive analysis of ATCO's rejected routes in this proceeding just north and south of Bruderheim using the data for those potential routes that was provided in ATCO's response to NBG-ATCO-3. Unfortunately, our analysis showed those rejected routes would have significantly higher residence impacts than ATCO route options that utilize the Current Preferred Route or the Previous Preferred Route between Node CDi23 and Node CD32c.

We then focused on an entirely new route option that largely makes use of an existing largely undeveloped west to east road allowance located approximately one-quarter section (800 meters) north of the existing west to east 240 kV AC transmission line in the North Bruderheim Area. By utilizing the existing undeveloped road allowance, the route, which I will designate as "Route BAI-1", avoids directly crossing the Northwest of Bruderheim Natural Area and the North Bruderheim Natural Areas. It also largely avoids the existing sand operation in the north half of 21-56-20-W4M and south half of 28-56-20-W4M.

I also developed a second northern route which I will designate as "Route BAI-3." Route BAI-3 is the same as Route BAI-1 except that at the Lamont County - Strathcona County boundary, Route BAI-3 runs south one quarter section along the west side of the road following the county boundary and then due east closely parallel to the north edge of the existing west to east 240 kV transmission line in the area.

My Routes BAI-1 and BAI-3 fully address the concerns of the North Bruderheim Group and provide the Commission with viable alternative route options in the North Bruderheim Area that follow a substantially different path than ATCO's

Previous Preferred Route. Attachment A of my evidence overlays my Routes BAI-1 and BAI-3 over ATCO's Map PF-03-R1. Attachment B of my evidence provides a comparison of routing factors for Routes BAI-1 and BAI-3 versus ATCO's Current Preferred Route and Previous Preferred Route between Node BAI1/CDi23 and Node CD32c.

Q YOU HAVE INDICATED THE CURRENT PREFERRED ROUTE DOES NOT FULLY ADDRESS THE CONCERNS OF THE NORTH BRUDERHEIM GROUP. CAN MODIFICATIONS BE MADE TO THE CURRENT PREFERRED ROUTE THAT WOULD REDUCE THE ADVERSE IMPACT OF THE CURRENT PREFERRED ROUTE ON MEMBERS OF THE NORTH BRUDERHEIM GROUP?

A While there is no additional modification of the Current Preferred Route from Node CDi23 to CD32c that would fully address the concerns of the North Bruderheim Group, there are two additional modifications of the Current Preferred Route that can be made that would help to further reduce the adverse impact of the EATL HVDC line on two of the members of the North Bruderheim Group.

First, both the Current Preferred Route and Previous Preferred Route would place major transmission lines on three sides of Mr. Reinhold Prochnau's land in SW-24-56-21-W4M (the existing 240 kV AC transmission line along the north edge of his land and the proposed 500 kV HVDC transmission line on the south and east side of his land). While Mr. Prochnau does not want either the Current Preferred Route or the Previous Preferred Route selected, if, despite that desire, the Commission selects the Current Preferred Route, he would like to modify the Current Preferred Route by running it due north (rather than due east) from the southwest corner of SW-24-21-W4M (Node BAI1b on Attachment A). The modified route would then run roughly

along the west side of SW-24-56-21-W4M until it intercepted the existing 240 kV AC transmission line right of way that runs roughly along the north edge of SW-24-56-21-W4M. From there, the route would run roughly east – south - east in parallel with the existing 240 kV AC transmission line to meet up with the remainder of the Current Preferred Route at Node CDi25n. This modification is shown as "Route BAI-2" on the west side of my Attachment A.

Q WHAT IS YOUR OTHER PROPOSED MODIFICATION OF THE CURRENT PREFERRED ROUTE?

A North Bruderheim Group member Mr. Garnett Frey has difficulty with the amount of damage that may be caused by the temporary workspace in a low area near a creek in the forested land that is associated with the position of the southward jog of the Current Preferred Route on his land in SE-20-56-20-W4M. Specifically, Mr. Frey would like to have the transmission structure that would be placed at Node CD29s moved to higher ground a little bit to the east of where ATCO has proposed to place the structure. Attachment C of my evidence presents a modification to the southward jog on the Current Preferred Route that addresses Mr. Frey's transmission structure placement concern while meeting the required setback from the active well sites on Mr. Frey's land. The modification is shown on the east side of my Attachment A as Route BAI-2.

On Attachment A, Route BAI-2 in its entirety consists of the Current Preferred Route from CDi23 to BAI1b, the route section marked as Route BAI-2 from BAI1b to BAI2b to BAI3b to CDi25n, the Current Preferred Route from CDi25n to BAI4b (just east of CD29a), the route section marked as Route BAI-2 from BAI4b to BAI5b to CD29b, and then the Current Preferred Route from CD29b to CD32c. Attachment B

of my evidence compares the routing factors for Route BAI-2 in its entirety versus the Current Preferred Route, Previous Preferred Route, Route BAI-1 and Route BAI-3 in the North Bruderheim Area.

Q OUTSIDE OF ENVIRONMENTAL FACTORS, HOW DO THESE FIVE ROUTE SEGMENT OPTIONS COMPARE?

A As shown in Attachment B, Routes BAI-1 and BAI-3 are approximately 1.8 km (12%) longer than the Current Preferred Route. They are also a bit more expensive than the Current Preferred Route.[1] All five routes have roughly similar residence impact performance. While Route BAI-1 makes good use of existing linear features where it can, those linear features involved less use of existing significant linear disturbances than the Current Preferred Route. On the other hand, Route BAI-3 only has 1.2 km less paralleling of existing transmission lines than the Current Preferred Route. Both Route BAI-1 and Route BAI-3 fully resolve the concerns the North Bruderheim Group has with ATCO's Current Preferred Route and Previous Preferred Route.

Route BAI-2 outperforms the other four routes with regard to closely paralleling existing significant linear disturbances such as existing transmission lines. Its residence impacts are roughly similar to that of the Current Preferred Route. Finally, it is only $1.0 million (3%) more expensive than the Current Preferred Route and does a better job of reducing adverse impacts on the North Bruderheim Group than the Current Preferred Route.

[1] If ATCO's Preferred Route is selected from Node B2 to Node CDi23, Route BAI-1 is approximately $2.1 million (6%) more expensive than the Current Preferred Route and Route BAI-3 is approximately $3.2 million (9%) more expensive than the Current Preferred Route. As shown in Attachment B, the cost difference is significantly higher if the Alternate Route from Node B2 to Node CDi23 is utilized.

The Previous Preferred Route is inferior to the Current Preferred Route with regard to closely paralleling existing linear disturbances and reducing adverse impact on North Bruderheim Group members.

Q HAS MR. WALLIS COMMENTED ON ROUTES BAI-1, BAI-2 AND BAI-3?

A Mr. Wallis has provided evidence on Routes BAI-1, BAI-2 and BAI-3. Mr. Wallis estimates that Route BAI-1 will affect 710 meters of woodland not paralleling existing significant linear disturbances and will cross right between an existing natural area (North Bruderheim Natural Area) and a proposed natural area (North Bruderheim Natural Area Reservation). Mr. Wallis identifies a somewhat similar challenge for Route BAI-3. However, Route BAI-3 would avoid crossing between the existing natural area and the proposed natural area. Furthermore, Route BAI-3 would run closely parallel to the existing 240 kV transmission line in the area where Route BAI-3 would cross the southern edge of the proposed natural area. This would reduce fragmentation.

With regard to Route BAI-2, Mr. Wallis indentifies fewer adverse bio-diversity impacts than with Routes BAI-1 and BAI-3.

V. Conclusions and Recommendations

Q WHAT ARE YOUR CONCLUSIONS AND RECOMMENDATIONS?

A I recommend against selection of ATCO's Previous Preferred Route from CDi23 to CD31. The Previous Preferred Route from CDi23 to CD31 is inferior to the Current Preferred Route and does not provide a reasonable alternative to the Current Preferred Route from CDi23 to CD31 as it has even more adverse impact on the North Bruderheim Group than the Current Preferred Route from CDi23 to CD31.

I also recommend consideration be given to selection of my proposed Routes BAI-1 and BAI-3 from Node BAI1 (just west of Node CDi23) to Node BAI4 (just west of Node CD31). Route BAI-1 would be predominantly located in an existing largely undeveloped road allowance which runs west to east one-quarter section (approximately 800 meters) north of the existing 240 kV AC transmission line in the area. Route BAI-3 would be similar to Route BAI-1 except that east of the Strathcona County – Lamont County boundary it would closely parallel the north edge of the existing west to east 240 kV transmission line and avoid bisecting the boundary between an existing proposed natural area. While a bit inferior to ATCO's Current Preferred Route with regard to routing factors, both of these routes fully resolve the concerns of the North Bruderheim Group.

If despite my recommendation, the Commission chooses not to select either my Route BAI-1 or BAI-3, I recommend the Commission select my Route BAI-2. Route BAI-2 is a modified version of ATCO's Current Preferred Route from Node CDi23 to Node CD31. The modifications reduce the impact of the Current Preferred Route by avoiding the south and east sides of the land of North Bruderheim Group member Mr. Reinhold Prochnau in SW-24-21-W4M and adjusting the southward jog in SE-20-20-W4M to a location that has less of an adverse impact on the land of North Bruderheim Group member Mr. Garnett Frey. The modifications also improve the Current Preferred Route by increasing the close paralleling of existing significant linear disturbances at a relatively small increase in cost.

Q DOES THIS CONCLUDE YOUR EVIDENCE?

A Yes, it does.

Qualifications of James R. Dauphinais

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017, USA.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I graduated from Hartford State Technical College in 1983 with an Associate's Degree in Electrical Engineering Technology. Subsequent to graduation I was employed by the Transmission Planning Department of the Northeast Utilities Service Company as an Engineering Technician.

While employed as an Engineering Technician, I completed undergraduate studies at the University of Hartford. I graduated in 1990 with a Bachelor's Degree in Electrical Engineering. Subsequent to graduation, I was promoted to the position of Associate Engineer. Between 1993 and 1994, I completed graduate level courses in the study of power system transients and power system protection through the Engineering Outreach Program of the University of Idaho. By 1996 I had been promoted to the position of Senior Engineer.

In the employment of the Northeast Utilities Service Company, I was responsible for conducting thermal, voltage and stability analyses of the Northeast Utilities' transmission system to support planning and operating decisions. This

involved the use of load flow and power system stability computer simulations. Among the most notable achievements I had in this area include the solution of a transient stability problem near Millstone Nuclear Power Station, and the solution of a small signal (or dynamic) stability problem near Seabrook Nuclear Power Station. In 1993 I was awarded the Chairman's Award, Northeast Utilities' highest employee award, for my work involving stability analysis in the vicinity of Millstone Nuclear Power Station.

From 1990 to 1997 I represented Northeast Utilities on the New England Power Pool Stability Task Force. I also represented Northeast Utilities on several other technical working groups within the New England Power Pool ("NEPOOL") and the Northeast Power Coordinating Council ("NPCC"), including the 1992-1996 New York-New England Transmission Working Group, the Southeastern Massachusetts/Rhode Island Transmission Working Group, the NPCC CPSS-2 Working Group on Extreme Disturbances and the NPCC SS-38 Working Group on Interarea Dynamic Analysis. This latter working group also included participation from a number of ECAR, PJM and VACAR utilities.

In addition to my technical responsibilities, I was also responsible for oversight of the day-to-day administration of Northeast Utilities' Open Access Transmission Tariff. This included the creation of Northeast Utilities' pre-FERC Order No. 889 transmission electronic bulletin board and the coordination of Northeast Utilities' transmission tariff filings prior to and after the issuance of Federal Energy Regulatory Commission ("FERC" or "Commission") FERC Order No. 888. I was also responsible for spearheading the implementation of Northeast Utilities' Open Access Same-Time Information System and Northeast Utilities' Standard of Conduct under FERC Order No. 889. During this time I represented Northeast Utilities on the Federal Energy

Regulatory Commission's "What" Working Group on Real-Time Information Networks. Later I served as Vice Chairman of the NEPOOL OASIS Working Group and Co-Chair of the Joint Transmission Services Information Network Functional Process Committee. I also served for a brief time on the Electric Power Research Institute facilitated "How" Working Group on OASIS and the North American Electric Reliability Council facilitated Commercial Practices Working Group.

In 1997 I joined the firm of Brubaker & Associates, Inc. The firm includes consultants with backgrounds in accounting, engineering, economics, mathematics, computer science and business. Since my employment with the firm, I have filed or presented testimony before the Federal Energy Regulatory Commission in Consumers Energy Company, Docket No. OA96-77-000, Midwest Independent Transmission System Operator, Inc., Docket No. ER98-1438-000, Montana Power Company, Docket No. ER98-2382-000, Inquiry Concerning the Commission's Policy on Independent System Operators, Docket No. PL98-5-003, SkyGen Energy LLC v. Southern Company Services, Inc., Docket No. EL00-77-000, Alliance Companies, et al., Docket No. EL02-65-000, et al., Entergy Services, Inc., Docket No. ER01-2201-000, and Remedying Undue Discrimination through Open Access Transmission Service, Standard Electricity Market Design, Docket No. RM01-12-000, Midwest Independent Transmission System Operator, Inc., Docket No. ER10-1791-000 and NorthWestern Corporation, Docket No. ER10-1138-000. I have also filed or presented testimony before the Alberta Utilities Commission, Colorado Public Utilities Commission, Connecticut Department of Public Utility Control, Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the Louisiana Public Service Commission, the Michigan Public Service Commission, the Missouri Public Service Commission, the

Montana Public Service Commission, the Public Utility Commission of Texas, the Wisconsin Public Service Commission and various committees of the Missouri State Legislature. This testimony has been given regarding a wide variety of issues including, but not limited to, avoided cost calculations, certification of public convenience and necessity, fuel adjustment clauses, interruptible rates, market power, market structure, prudency, resource planning, standby rates, transmission losses, transmission planning and transmission line routing.

I have also participated on behalf of clients in the Southwest Power Pool Congestion Management System Working Group, the Alliance Market Development Advisory Group and several working groups of the Midwest Independent Transmission System Operator, Inc. ("MISO"), including the Congestion Management Working Group and Supply Adequacy Working Group. I am currently an alternate member of the MISO Advisory Committee in the end-use customer sector on behalf of a group of industrial end-use customers in Illinois. I am also the past Chairman of the Issues/Solutions Subgroup of the MISO Revenue Sufficiency Guarantee ("RSG") Task Force.

In 2009, I completed the University of Wisconsin-Madison High Voltage Direct Current ("HVDC") Transmission course for Planners that was sponsored by MISO. I am a member of the Power and Energy Society ("PES") of the Institute of Electrical and Electronics Engineers ("IEEE").

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

BEFORE THE

THE ALBERTA UTILITIES COMMISSION

Re: ATCO Electric's: Application: Proposal Eastern Alberta Transmission Line (EATL) Project	)	**Application 1607153 / Proceeding ID 1069**

Evidence of

James R. Dauphinais

On behalf of

POWERLESS

Project 9475
May 7, 2012

BRUBAKER & ASSOCIATES, INC.
CHESTERFIELD, MO 63017

BEFORE THE

THE ALBERTA UTILITIES COMMISSION

Re: ATCO Electric's: Application: Proposal Eastern Alberta Transmission Line (EATL) Project	**Application 1607153 / Proceeding ID 1069**

Evidence of James R. Dauphinais

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and Principal of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I have earned a Bachelor of Science in Electrical Engineering from the University of Hartford and have completed a number of graduate level courses in electric power systems through the Engineering Outreach Program of the University of Idaho. In the twelve and one-half years prior to the beginning of my current employment with BAI, I was employed in the Transmission Resource Planning Department of the Northeast Utilities Service Company. Since my employment with BAI in 1997, I have testified before the Federal Energy Regulatory Commission and many state commissions on a wide variety of issues including, but not limited to, avoided cost calculations,

certification of public convenience and necessity, fuel adjustment clauses, interruptible rates, market power, market structure, prudency, resource planning, standby rates, transmission rates, transmission line routing, transmission losses, and transmission planning. I have also testified in the past before the Alberta Utilities Commission ("AUC" or "Commission") regarding transmission line routing issues. Finally, I have assisted end-use customers with power procurement and a variety of clients in regard to transmission access issues. My background is further detailed in Appendix A to my evidence.

Q PLEASE IDENTIFY THE MATTERS WHERE IN THE PAST YOU FILED EVIDENCE OR TESTIMONY REGARDING TRANSMISSION LINE ROUTING.

A I have in the past filed transmission line routing evidence or testimony in the following matters:

Jurisdiction	Applicant	Docket/Proceeding No.
PUCT[1]	Oncor Electric Delivery Company	37464
PUCT	LCRA Transmission Service Corporation	37778
PUCT	Oncor Electric Delivery Company	38140
PUCT	Lone Star Transmission, LLC	38230
PUCT	Sharyland Utilities, L.P.	38290
PUCT	Oncor Electric Delivery Company	38324
PUCT	LCRA Transmission Services Corporation	38354
PUCT	Oncor Electric Delivery Company	38597
MPSC[2]	International Transmission Company	U-16200
AUC[3]	AltaLink Management Ltd.	979
AUC	ATCO Electric	1363

[1]Public Utility Commission of Texas
[2]Michigan Public Service Commission
[3]Alberta Utilities Commission

Q ON WHOSE BEHALF ARE YOU PROVIDING EVIDENCE IN THIS PROCEEDING?

A I am providing evidence on behalf of POWERLESS. POWERLESS is a group of landowners with lands and/or residences in the Mundare-Holden area along or near ATCO's Alternate Route for its proposed Eastern Alberta Transmission Line ("EATL") project from Node B80 to Node CD155 (more precisely, in the area from Node B114 to Node B142 – northwest, west and southwest of Holden). The name, location of lands and proximity to the EATL Alternate Route from Node B80 to Node CD155 for each of the members of POWERLESS is summarized in Table JRD-1.

Table JRD-1

Summary of POWERLESS Members

Name	Location of Lands	Nearest Proximity of Residence to B80 to CD155 Alternate Route Segment Centre Line (meters)	Nearest Proximity of Land to B80 to CD155 Alternate Route Segment Centre Line (meters)
Lloyd Baier	NE-27-49-17-W4M	825	800
	NE-23-49-17-W4M	415	0
Jim & Marilyn Charpentier	SE-14-48-17-W4M	757	0
	SW-14-48-17-W4M	N/A	0
Marilynn Fenske	SE & SW-14-50-17-W4M	981	0
	NW-18-50-16-W4M	N/A	826
	NE-15-49-17-W4M	N/A	823
Linda Hunt [1]	SE-1-50-17-W4M	350	0
Glenn & Tammy Jensen [2]	SW-30-49-16-W4M	1475	825
John & Catherine Jensen	SW-36-49-17-W4M	N/A	0
	NE & SE-35-49-17-W4M	1443	823
	SW-35-49-17-W4M	N/A	1627
Bob & Jane Kushnerick	SW-36-48-17-W4M	N/A	825
Jerry & Myrtle Kushnerick	NE-27-48-17-W4M	N/A	825
	SE-27-48-17-W4M	N/A	825
Jerry Kushnerick	SW-35-48-17-W4M	N/A	0
Myrtle Kushnerick	SE & SW-26-48-17-W4M	523	0
Jason Lusk	SE-36-49-17-W4M	771	0
	NE-25-49-17-W4M	360	0
David Maruszeczka	NE-26-48-17-W4M	663	0
Tom Nahimiak	SE-33-48-17-W4M	N/A	2454
Mary Jane & Darlene Nakonechny	SW-27-51-17-W4M, NW & NE-36-49-17, & SE-2-52-17-W4M	3375	0

[1] Proximity to residence calculated using Map PF-20W

[2] Proximity to residence calculated using combination of Map PF-20W and landowner consultation

Source: ATCO Response to Information Request PWRLESS-ATCO-4

As can be seen from Table JRD-1, two (2) members of POWERLESS have residences within 400 m of the centre line of the B80 to CD155 Alternate Route Segment, five (5) members of POWERLESS have residences between 400 m to 800 m from the centre line of the B80 to CD155 Alternate Route Segment, and nine (9) members of POWERLESS have land over which the Right-of-Way ("ROW") of the B80 to CD155 Alternate Route Segment would cross (due to being within 0 meters of the centre line of the route segment). In response to Information Request PWRLESS-ATCO-5(c), ATCO has estimated the area of the B80 to CD155 Alternate Route Segment ROW that would be on the property of POWERLESS members is approximately 78 acres.

While the members of POWERLESS appreciate that ATCO has not selected the B80 to CD155 Alternate Route Segment as part of its Preferred Route for the EATL project, they are still very concerned that it could be ultimately selected as part of the route for the EATL project since ATCO continues to include the B80 to CD155 Alternate Route Segment as one of its filed alternative routes in this proceeding. It is the position of the members of POWERLESS that ATCO did not adequately address their concerns with the B80 to CD155 Alternate Route Segment during the consultation process for the EATL project.

Q WHAT IS THE SUBJECT MATTER OF YOUR EVIDENCE?

A My evidence addresses the Application of ATCO for a permit and license to construct and operate the proposed EATL project. The EATL project consists of the following:

- Two AC/DC converter stations (Heathfield Converter Station 2029S and Newell Converter Station 2075S);
- A 500 kV High Voltage Direct Current ("HVDC") transmission line (13L50) connecting Heathfield and Newell;

- Two 500 kV Alternating Current ("AC") circuits (12L70/12L85) to connect Heathfield to Heartland;
- Four 240 kV AC circuits (1087L/923L and 1088L/1035L) to connect Newell to the existing 240 kV transmission line 923L and the proposed 240 kV transmission line 1034L/1035L, respectively;
- Modification of the existing 240 kV AC circuit 9L950 at two locations;
- A telecommunication tower at each of the two converter stations;
- An emergency backup generator at each of the two converter stations;
- One fibre-optic cable line; and
- Four optical repeater sites.

At the request of POWERLESS' counsel, I evaluated the reasonableness of ATCO's filed route options (Preferred Route, Alternate Route, Royal Park Route and various combinations of the three) for the Andrew-Mundare-Holden section (EFi60-CD155) of the 500 kV HVDC transmission line portion of the proposed EATL project. The B80 to CD155 Alternate Route Segment is part of the Alternate Route for the Andrew-Mundare-Holden section of the 500 kV HVDC line portion of EATL. My silence in regard to any issue should not be taken as an endorsement of any position taken by ATCO with respect to that issue.

Q CAN YOU PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS?

A I concur with ATCO's selection of the entire Preferred Route from Node EFi60 to Node C155 for the 500 kV HVDC transmission line in Andrew-Mundare-Holden area and recommend its selection as the route for the 500 kV HVDC transmission line in this area. The use of ATCO's entire Preferred Route for this section of the 500 kV HVDC line has the lowest impact on residences of the ATCO-filed route options in the

area that avoid placing a residence within 150 m of the HVDC line. It also has the lowest number of land parcel and landowner objections. Furthermore, it is only 3.6% more expensive than the cheapest ATCO-filed routing option in this area. Finally, it is not significantly worse than any other ATCO-filed route in the area with regard to other factors the Commission generally considers in selecting a transmission line route. Note that none of the ATCO-filed routes in the area utilize existing linear features other than quarter section lines. Such quarter section lines do not always amount to a property boundary (e.g., in the case of adjacent quarter sections under common ownership) and may not currently be a vertical linear disturbance of any significance.

If despite my recommendation, the Commission chooses not to select ATCO's Preferred Route in its entirety in the Andrew-Mundare-Holden area, I recommend the Commission select one of the following three route options, which I have listed in order of relative merit:

- Preferred Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155;
- Alternate Route EFi60-B80-CD89 / Preferred Route CD89-CD155; or
- Alternate Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155.

My merit ordering of the three is based on their degree of residence impact and degree of confirmed land parcel and landowner objections. In other respects, these three route options are very similar to the entire Preferred Route option (Preferred Route EFi60-CD155) in this area.

I recommend against selection of any route in the area that utilizes the Alternate Route from Node B80 to Node CD155. Those routes are not appreciably better than the routes I have recommended and face significantly more confirmed

land parcel and landowner objections than the routes I have recommended. Furthermore, they do not satisfy the concerns of the members of POWERLESS.

II. Route Selection Factors

Q WHAT FACTORS SHOULD BE CONSIDERED IN THE SELECTION OF A TRANSMISSION LINE ROUTE BY THE COMMISSION?

A Safety and health, cost, the impact on property owners, the impact on the environment, the impact on archeological and historic sites and the impact on aesthetics are all factors that should be considered. The transmission line route selection objectives and considerations presented in Alberta Environment's Environmental Protection Guidelines for Transmission Lines ("Alberta Environment R&R/11-03") should also be considered by the Commission. Finally, while they technically apply to ISO Needs Identification Applications rather than Transmission Line Applications, it is also appropriate to apply the agriculture impact, residential impact, environmental impact, cost, electrical consideration, visual impact and special constraints aspects of ND12 of Section 6.1 of AUC Rule 007.

Q SHOULD GREATER WEIGHT BE PLACED ON CERTAIN FACTORS VERSUS OTHERS?

A Yes. While all factors should be considered, some factors should be given more weight than others. For example, when practicable, it is desirable to route new transmission lines using existing linear developments such as road allowances, fence lines, quarter section and section lines, and existing transmission or utility corridors as outlined in Section 1.2 of Alberta Environment R&R/11-03. However, if two hypothetical alternative routes only differed in that one entirely ran along quarter lines

and the other entirely ran along an existing transmission line corridor, it could not be said that the two routes have similar impacts as the existing transmission line corridor route is already impacted by existing transmission line infrastructure while the quarter line route is not likely to have been as significantly impacted by existing infrastructure. Thus, all else being equal, the route using the existing transmission line corridor would likely be a much better route for the proposed line than the one that utilized quarter lines.

As another example, if two hypothetical routes differed only in that one introduced significant health and safety concerns, but the other introduced significant aesthetic concerns, if a choice had to be made between the two lines, it is likely the route with greater aesthetic impact would be the better choice of the two routes.

Q WHEN WEIGHING THE FACTORS TO BE CONSIDERED, IS IT POSSIBLE THAT SUBSTANTIALLY BETTER PERFORMANCE WITH RESPECT TO ONE FACTOR CAN ULTIMATELY OUTWEIGH INFERIOR PERFORMANCE WITH RESPECT TO ANOTHER FACTOR?

A Yes. A hypothetical example of this would be when one route impacts a relatively small number of residences, but very little of its length runs along existing transmission line corridors. In such a circumstance, it may be appropriate to select a different route that impacts more residences if that route also significantly outperforms the other route in terms of minimizing the portion of its length that does not run along existing transmission line corridors.

III. ATCO's Route Selection Analysis

Q PLEASE DESCRIBE THE METHOD ATCO UTILIZED TO DEVELOP ITS FILED PREFERRED AND ALTERNATIVE 500 KV HVDC LINE ROUTES IN THIS PROCEEDING.

A ATCO reports that it developed general criteria that were taken into consideration through the route selection process. These criteria include:

- Minimizing impacts to other land uses such as residences, built-up area and oil and gas facilities;
- Utilizing existing linear disturbances to minimize new disturbance and clearing;
- Following existing transmission lines where practical;
- Keeping routes reasonably straight to reduce line length and avoid costly corner structures;
- Minimizing length across environmentally sensitive areas such as watercourses, recreation areas, parks, campgrounds, and sensitive wildlife habitat to the extent feasible; and
- Minimizing length through wet areas and steep slopes both for better access and to reduce environmental impacts.

ATCO then developed specific criteria from these general criteria by taking guidance from AUC Rule 007, Alberta Environment's Environmental Protection Guidelines for Electric Transmission Lines (C&R/IL/95-2), the AESO's functional specification for the project, and factors as determined by the professional judgment of its experienced planners. (ATCO Application Attachment 1 at page 65).

Q HOW DID ATCO PROCEED ONCE IT HAD DEVELOPED PRELIMINARY ROUTE OPTIONS?

A ATCO selected route options in three stages: preliminary route options for initial and extended public consultation; a more detailed and refined preferred route and

alternative route segments for additional consultation; and the final preferred route and alternative route segments as filed in the application.

Q HOW DID ATCO ARRIVE AT ITS FINAL CHOICE OF ITS PREFERRED ROUTE FOR THE 500 KV HVDC TRANSMISSION LINE?

A ATCO indicates that information gathered through the extended consultation process was incorporated into the metrics for the route options as well as information it collected from further aerial and ground reconnaissance. ATCO reports it conducted a final comparison of routes based on key criteria, with the greatest weight applied to routes that best avoided close proximity to residences, followed existing or other planned transmission lines, avoided routes with the greatest number of parcels where landowners had identified specific objections and concerns, and provided the greatest avoidance or separation from other constraint and development criteria where feasible. (ATCO Application Attachment 1 at page 70).

IV. ATCO-Filed Route Options for the Proposed 500 kV HVDC Transmission Line in the Andrew-Mundare-Holden Area

Q WHAT ROUTE OPTIONS HAS ATCO FILED IN THE ANDREW-MUNDARE-HOLDEN AREA (NODE EFi60 to NODE CD155) FOR THE PROPOSED 500 KV HVDC TRANSMISSION LINE?

A ATCO originally filed a Preferred Route from EFi60 to CD155 located east of Mundare and Holden, an Alternate Route from EFi60 to CD155 located west of Mundare and Holden, and a crossover Alternate Route between B80 and CD89. This created the following four filed route options in the area:

- Preferred Route EFi60-CD155;
- Alternate Route EFi-CD155;

- Preferred Route EFi60-CD89 / Alternate Route CD89-CD155; and
- Alternate Route EFi60-CD89 / Preferred Route CD89-CD155.

Subsequent to the filing of its application in this proceeding, ATCO made a supplemental filing which introduced additional filed route alternatives in the Andrew-Mundare-Holden area. Specifically, ATCO introduced a new filed alternative route, known as the Royal Park Alternative ("Royal Park Route"), that runs from CD89 to CD123 just east of the Preferred Route between those two same nodes (see ATCO Reference Map Drawing RS-13L150-A-02b R1 dated September 2011 that was filed with the Commission by ATCO on September 30, 2011 as part of SUPP2-Attachment 07). The addition of the Royal Park Route expanded the number of ATCO-filed route options in the Andrew-Mundare-Holden area by adding the following two additional ATCO-filed route options to the existing four options:

- Preferred Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155; and
- Alternate Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155.

Q HOW DO THE ATCO-FILED ROUTE OPTIONS IN THE ANDREW-MUNDARE-HOLDEN AREAS COMPARE?

A ATCO filed a route factor comparison of five of its six filed route options in the area as part of its May 1, 2012 filing in this proceeding as SUPP3-Table 9 of Attachment SUPP3-Attachment 06. ATCO's SUPP-Table 9 shows:

- Preferred Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155 has the lowest impact on residences of the five compared routes, but has one residence located within 150 meters of the route;
- Preferred Route EFi60-CD155 has the lowest impact on residences of the route options that do not have a residence located within 150 meters of the route;

- Preferred Route EFi60-CD155 has the lowest number of confirmed land parcel and landowner complaints;
- The four routes that do not utilize the Alternate Route from B80 to CD155 are only 3.6% to 3.9% more expensive than the Alternate Route EFi60-CD155;
- Alternate Route EFi60-CD155 has 27 to 38 (33% to 54%) more confirmed land parcel objections on the ROW than the four routes that do not utilize the Alternate Route from B80 to CD155;
- Alternate Route EFi60-CD155 has 49 to 74 (25% to 44%) more confirmed land parcel objections within 800 meters of the ROW than the four routes that do not utilize the Alternate Route from B80 to CD155;
- Alternate Route EFi60-CD155 has 8 to 18 (6% to 16%) more confirmed within 800 meter landowner objections than the four routes that do not utilize the Alternate Route from B80 to CD155;
- None of five routes utilize existing linear disturbances other than quarter section lines; and
- None of the routes is appreciably better than the others with regard to the other factors typically considered by the Commission when selecting a transmission line route.

Q DID THE ADDITION OF THE ROYAL PARK ROUTE OPTIONS CHANGE ATCO'S ROUTE PREFERENCE IN THE ANDREW-MUNDARE-HOLDEN AREA?

A No. ATCO continues to prefer using the entire Preferred Route in the Andrew-Mundare-Holden area.

V. Conclusions and Recommendations

Q WHAT ARE YOUR CONCLUSIONS AND RECOMMENDATIONS?

A I concur with ATCO's selection of the entire Preferred Route from Node EFi60 to Node C155 for the 500 kV HVDC transmission line in Andrew-Mundare-Holden area and recommend its selection as the route for the 500 kV HVDC transmission line in

this area. The use of ATCO's entire Preferred Route for this section of the 500 kV HVDC line has the lowest impact on residences of the ATCO-filed route options in the area that avoid placing a residence within 150 m of the HVDC line. It also has the lowest number of land parcel and landowner objections. Furthermore, it is only 3.6% more expensive than the cheapest ATCO-filed routing option in this area. Finally, it is not significantly worse than any other ATCO-filed route in the area with regard to other factors the Commission generally considers in selecting a transmission line route. Note that none of the ATCO-filed routes in the area utilize existing linear features other than quarter section lines. Such quarter section lines do not always amount to a property boundary (e.g., in the case of adjacent quarter sections under common ownership) and may not currently be a vertical linear disturbance of any significance.

If despite my recommendation, the Commission chooses not to select ATCO's Preferred Route in its entirety in the Andrew-Mundare-Holder area, I recommend the Commission select one of the following three route options, which I have listed in order of relative merit:

- Preferred Route EFi60-CD89 / Royal Park Route CD89-CD123 / Preferred Route CD123-CD155;
- Alternate Route EFi60-B80-CD89 / Preferred Route CD89-CD155; or
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My merit ordering of the three is based on their degree of residence impact and degree of confirmed land parcel and landowner objections. In other respects, these three route options are very similar to the entire Preferred Route option (Preferred Route EFi60-CD155) in this area.

I recommend against selection of any route in the area that utilizes the Alternate Route from Node B80 to Node CD155. Those routes are not appreciably better than the routes I have recommended and face significantly more confirmed land parcel and landowner objections than the routes I have recommended. Furthermore, they do not satisfy the concerns of the members of POWERLESS.

Q DOES THIS CONCLUDE YOUR EVIDENCE?

A Yes, it does.

Qualifications of James R. Dauphinais

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A James R. Dauphinais. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017, USA.

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Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I graduated from Hartford State Technical College in 1983 with an Associate's Degree in Electrical Engineering Technology. Subsequent to graduation I was employed by the Transmission Planning Department of the Northeast Utilities Service Company as an Engineering Technician.

While employed as an Engineering Technician, I completed undergraduate studies at the University of Hartford. I graduated in 1990 with a Bachelor's Degree in Electrical Engineering. Subsequent to graduation, I was promoted to the position of Associate Engineer. Between 1993 and 1994, I completed graduate level courses in the study of power system transients and power system protection through the Engineering Outreach Program of the University of Idaho. By 1996 I had been promoted to the position of Senior Engineer.

In the employment of the Northeast Utilities Service Company, I was responsible for conducting thermal, voltage and stability analyses of the Northeast Utilities' transmission system to support planning and operating decisions. This

involved the use of load flow and power system stability computer simulations. Among the most notable achievements I had in this area include the solution of a transient stability problem near Millstone Nuclear Power Station, and the solution of a small signal (or dynamic) stability problem near Seabrook Nuclear Power Station. In 1993 I was awarded the Chairman's Award, Northeast Utilities' highest employee award, for my work involving stability analysis in the vicinity of Millstone Nuclear Power Station.

From 1990 to 1997 I represented Northeast Utilities on the New England Power Pool Stability Task Force. I also represented Northeast Utilities on several other technical working groups within the New England Power Pool ("NEPOOL") and the Northeast Power Coordinating Council ("NPCC"), including the 1992-1996 New York-New England Transmission Working Group, the Southeastern Massachusetts/Rhode Island Transmission Working Group, the NPCC CPSS-2 Working Group on Extreme Disturbances and the NPCC SS-38 Working Group on Interarea Dynamic Analysis. This latter working group also included participation from a number of ECAR, PJM and VACAR utilities.

In addition to my technical responsibilities, I was also responsible for oversight of the day-to-day administration of Northeast Utilities' Open Access Transmission Tariff. This included the creation of Northeast Utilities' pre-FERC Order No. 889 transmission electronic bulletin board and the coordination of Northeast Utilities' transmission tariff filings prior to and after the issuance of Federal Energy Regulatory Commission ("FERC" or "Commission") FERC Order No. 888. I was also responsible for spearheading the implementation of Northeast Utilities' Open Access Same-Time Information System and Northeast Utilities' Standard of Conduct under FERC Order No. 889. During this time I represented Northeast Utilities on the Federal Energy

Regulatory Commission's "What" Working Group on Real-Time Information Networks. Later I served as Vice Chairman of the NEPOOL OASIS Working Group and Co-Chair of the Joint Transmission Services Information Network Functional Process Committee. I also served for a brief time on the Electric Power Research Institute facilitated "How" Working Group on OASIS and the North American Electric Reliability Council facilitated Commercial Practices Working Group.

In 1997 I joined the firm of Brubaker & Associates, Inc. The firm includes consultants with backgrounds in accounting, engineering, economics, mathematics, computer science and business. Since my employment with the firm, I have filed or presented testimony before the Federal Energy Regulatory Commission in Consumers Energy Company, Docket No. OA96-77-000, Midwest Independent Transmission System Operator, Inc., Docket No. ER98-1438-000, Montana Power Company, Docket No. ER98-2382-000, Inquiry Concerning the Commission's Policy on Independent System Operators, Docket No. PL98-5-003, SkyGen Energy LLC v. Southern Company Services, Inc., Docket No. EL00-77-000, Alliance Companies, et al., Docket No. EL02-65-000, et al., Entergy Services, Inc., Docket No. ER01-2201-000, and Remedying Undue Discrimination through Open Access Transmission Service, Standard Electricity Market Design, Docket No. RM01-12-000, Midwest Independent Transmission System Operator, Inc., Docket No. ER10-1791-000 and NorthWestern Corporation, Docket No. ER10-1138-000. I have also filed or presented testimony before the Alberta Utilities Commission, Colorado Public Utilities Commission, Connecticut Department of Public Utility Control, Illinois Commerce Commission, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the Louisiana Public Service Commission, the Michigan Public Service Commission, the Missouri Public Service Commission, the

Montana Public Service Commission, the Public Utility Commission of Texas, the Wisconsin Public Service Commission and various committees of the Missouri State Legislature. This testimony has been given regarding a wide variety of issues including, but not limited to, avoided cost calculations, certification of public convenience and necessity, fuel adjustment clauses, interruptible rates, market power, market structure, prudency, resource planning, standby rates, transmission losses, transmission planning and transmission line routing.

I have also participated on behalf of clients in the Southwest Power Pool Congestion Management System Working Group, the Alliance Market Development Advisory Group and several working groups of the Midwest Independent Transmission System Operator, Inc. ("MISO"), including the Congestion Management Working Group and Supply Adequacy Working Group. I am currently an alternate member of the MISO Advisory Committee in the end-use customer sector on behalf of a group of industrial end-use customers in Illinois. I am also the past Chairman of the Issues/Solutions Subgroup of the MISO Revenue Sufficiency Guarantee ("RSG") Task Force.

In 2009, I completed the University of Wisconsin-Madison High Voltage Direct Current ("HVDC") Transmission course for Planners that was sponsored by MISO. I am a member of the Power and Energy Society ("PES") of the Institute of Electrical and Electronics Engineers ("IEEE").

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

BEFORE THE

ALBERTA UTILITIES COMMISSION

Re: ATCO Electric Ltd.: New 144kV transmission line, to be called 7LA24, to connect existing transmission line, 7L24, to a new substation to be called Beartrap 940S	**Application 1609059** **Proceeding ID 2196**

Evidence and Attachments of

James R. Dauphinais

On behalf of

Red Route Group

June 7, 2013

BRUBAKER & ASSOCIATES, INC.

Project 9789