

**BEFORE THE  
COUNCIL OF THE CITY OF NEW ORLEANS**

**APPLICATION OF ENTERGY NEW )  
ORLEANS, INC. FOR APPROVAL )  
TO CONSTRUCT NEW ORLEANS ) DOCKET NO. UD-16-02  
POWER STATION AND REQUEST FOR )  
COST RECOVERY AND TIMELY RELIEF )**

Direct Testimony and Exhibit of

**James R. Dauphinais**

On behalf of

**Air Products and Chemicals, Inc.**

January 6, 2017





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Direct Testimony of James R. Dauphinais

1 **I. INTRODUCTION AND SUMMARY OF CONCLUSIONS**

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

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

5 **Q WHAT IS YOUR OCCUPATION?**

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

8 **Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**  
9 **EXPERIENCE.**

10 A This information is included in Appendix A to my testimony.

11 **Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

12 A I am appearing on behalf of Air Products and Chemicals, Inc. (“Air Products”), a large  
13 industrial customer taking service from Entergy New Orleans, Inc. (“ENO”). Air  
14 Products has been a customer of ENO, and predecessor company New Orleans Public

1 Service, Inc., since 1965. Its load is primarily interruptible, and it is the only customer  
2 taking service under the LIS rate.

3 The Air Products facility sustained significant damage as a result of Hurricane  
4 Katrina. Air Products spent in excess of \$80 million to rebuild the facility and to  
5 maintain its presence in New Orleans.

6 **Q HAVE YOU REVIEWED THE APPLICATION, TESTIMONY, EXHIBITS**  
7 **AND OTHER MATERIAL FILED IN THIS PROCEEDING?**

8 A Yes. I have reviewed both the public and highly sensitive protected material  
9 (“HSPM”) from this proceeding related to the issues addressed by my direct  
10 testimony, including the application and the applicable, testimony, exhibits and  
11 responses to data requests. In addition, I have reviewed the MISO MTEP16 list of  
12 Appendices A and B transmission projects and MISO’s recent MTEP17 presentations.

13 **Q WHAT SUBJECTS DO YOU ADDRESS IN YOUR TESTIMONY?**

14 A My testimony addresses the question of what action the Council of the City of New  
15 Orleans (“Council”) should take with respect to the application of ENO for approval to  
16 construct the New Orleans Power Station (“NOPS”) with respect to the issue of the  
17 local reliability need for NOPS.

1 Q PLEASE EXPLAIN THE TERM “LOCAL RELIABILITY” AS YOU USE IT  
2 IN THIS TESTIMONY.

3 A When I use the term “Local Reliability” in this testimony, I am specifically referring  
4 to reliability issues in the Downstream of Gypsy (“DSG”) load pocket including the  
5 New Orleans area that are a consequence of the current limitations of the transmission  
6 facilities feeding DSG. These generally fall into the following three categories:

- 7 • Thermal transmission constraints which involve potential overloading of  
8 individual transmission facilities feeding, or located within, DSG;
- 9 • Voltage and reactive power constraints with respect to the delivery of  
10 power into DSG from sources located outside of DSG; and
- 11 • Resource Adequacy constraints within DSG related to either, or both, of  
12 the above.

13 Unlike for the more global overall resource adequacy reliability needs of a  
14 utility, local reliability needs can be addressed by a utility through transmission  
15 solutions in addition to generation and demand response solutions. Furthermore, it is  
16 important to note local reliability needs and the overall need for resource adequacy are  
17 fairly exclusive of one another. A utility could have all of the capacity it needs to  
18 meet its overall resource adequacy needs, but it may still need yet additional  
19 generation, demand response or transmission solutions to address local reliability.  
20 Similarly, a utility may have fully addressed its local reliability needs, but may still  
21 need additional generation or demand response to meet its more global overall  
22 resource adequacy need.

1    **Q     PLEASE SUMMARIZE YOUR CONCLUSIONS.**

2    A     I conclude the following:

- 3           1. ENO has identified certain transmission upgrades within DSG it believes it will  
4           need to pursue if NOPS is not constructed. However, the cost of those upgrades,  
5           including any avoidance of the cost of those upgrades that might be realized  
6           through other resource alternatives located within DSG, should be included in the  
7           overall present value economic analysis of NOPS versus alternatives to NOPS; and
- 8           2. ENO has not reasonably demonstrated there is a local thermal, voltage, reactive  
9           power or resource adequacy need for NOPS.

10   **II. AVOIDED TRANSMISSION UPGRADES**

11   **Q     HAS ENO IDENTIFIED ANY LOCAL TRANSMISSION UPGRADES THAT**  
12       **IT BELIEVES IT COULD AVOID BY CONSTRUCTING NOPS?**

13   A     Yes. ENO witness Charles Long indicated that ENO believes tens of millions of  
14       dollars of transmission upgrades necessary for local reliability could be avoided  
15       through the construction of NOPS (Long Direct at 6-10). In the non-Critical Energy  
16       Infrastructure Information (“CEII”) portion of the response to Advisors’ Data Request  
17       1-19, ENO provided a list of, and cost estimates for, the transmission upgrades it  
18       believes would likely be needed if NOPS were not constructed. I have provided a  
19       copy of the non-CEII portion of this response as Exhibit JRD-1 to my direct  
20       testimony. The estimated cost of the upgrades identified by ENO total to  
21       approximately \$66 million.

22   **Q     HAS ENO IDENTIFIED WHEN IN THE FUTURE THESE TRANSMISSION**  
23       **UPGRADES WILL BE NECESSARY?**

24   A     No.

1   **Q    HAVE ANY OF THE UPGRADES IDENTIFIED BY ENO BEEN IDENTIFIED**  
2       **BY THE MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.**  
3       **(“MISO”) AS PART OF MISO’S MTEP TRANSMISSION PLANNING**  
4       **PROCESS?**

5    A    No. The projects do not appear in either Appendices A or B of MISO’s final MTEP16  
6        report. Nor do they appear in MISO’s presentation on the Entergy Louisiana and  
7        Entergy New Orleans MTEP17 project review during the December 8, 2016 1<sup>st</sup> South  
8        Sub-Regional Planning Meeting.

9    **Q    IN ITS MTEP STUDIES, DOES MISO ASSUME CONSTRUCTION OF NOPS**  
10       **BY 2019?**

11   A    No. MISO does not include any new generation in its MTEP reliability studies  
12        besides those generation facilities that have an executed generation interconnection  
13        agreement with MISO. ENO does not currently have an executed generation  
14        interconnection agreement with MISO for NOPS.

15   **Q    WHAT IS THE RELEVANCE OF THE FACT THE PROJECTS IDENTIFIED**  
16       **BY ENO AS BEING LIKELY NEEDED WITHOUT NOPS HAVE NOT BEEN**  
17       **IDENTIFIED IN THE MISO MTEP PROCESS?**

18   A    The fact that the projects have not been identified in the MISO MTEP process  
19        suggests they may not be needed until several years from now, and the final list of  
20        projects may be much shorter and/or of lower cost once an effort is made to refine  
21        them.

1    **Q    HAS ENO STUDIED WHETHER OTHER RESOURCE ALTERNATIVES TO**  
2    **NOPS, IF LOCATED WITHIN DSG, COULD REDUCE OR ELIMINATE THE**  
3    **NEED FOR THE TRANSMISSION UPGRADES THAT ENO HAS**  
4    **IDENTIFIED THAT IT BELIEVES WILL LIKELY BE NEEDED IF NOPS IS**  
5    **NOT CONSTRUCTED?**

6    A    No.

7    **Q    IN YOUR OPINION, WOULD OTHER RESOURCE ALTERNATIVES**  
8    **REDUCE THE NUMBER AND COST OF THE TRANSMISSION UPGRADES**  
9    **THAT MAY BE NECESSARY IF NOPS IS NOT CONSTRUCTED?**

10   A    Yes. While a study would be necessary for each specific resource, in general, the  
11   addition of a new resource into DSG should reduce some or all of the need for the  
12   transmission upgrades that ENO has identified that it believes will likely be necessary  
13   if NOPS is not constructed.

14   **Q    HOW SHOULD THE QUESTION OF TRANSMISSION UPGRADES BE**  
15   **CONSIDERED IN THE ECONOMIC EVALUATION OF NOPS VERSUS**  
16   **ALTERNATIVES TO NOPS?**

17   A    These costs should be incorporated into the present value economic analysis of NOPS  
18   versus alternatives to NOPS based on the expected date of need of the upgrades and  
19   the estimated revenue requirement for the upgrades. This includes the reduction in the  
20   number and cost for such upgrades for those resource alternatives to NOPS that would  
21   also be located within DSG.



1 **III. OTHER RELIABILITY PROBLEMS**

2 **Q HAS ENO DEMONSTRATED ANY OTHER LOCAL RELIABILITY ISSUES**  
3 **THAT WOULD NEED TO BE ADDRESSED IF NOPS WERE NOT**  
4 **CONSTRUCTED?**

5 A No. While ENO witness Mr. Long discusses the likelihood of NOPS qualifying as a  
6 MISO DSG Voltage and Local Reliability (“VLR”) resource, NOPS potentially  
7 providing several other local reliability benefits (Long Direct at 4-7 and 11-15) and  
8 NOPS potentially providing local real and reactive power benefits, ENO has not  
9 demonstrated an actual need at this time for any of these. In particular, there has been  
10 no demonstration by ENO of a need for such incremental improvements of reliability  
11 in DSG or whether the most cost effective way to provide such an incremental  
12 improvement would be through the construction of NOPS.

13 **Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

14 A Yes, it does.

**Qualifications of James R. Dauphinais**

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

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

4   **Q   PLEASE STATE YOUR OCCUPATION.**

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

8   **Q   PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND  
9   EXPERIENCE.**

10  A   I graduated from Hartford State Technical College in 1983 with an Associate's Degree  
11  in Electrical Engineering Technology. Subsequent to graduation I was employed by  
12  the Transmission Planning Department of the Northeast Utilities Service Company<sup>1</sup> as  
13  an Engineering Technician.

14           While employed as an Engineering Technician, I completed undergraduate  
15  studies at the University of Hartford. I graduated in 1990 with a Bachelor's Degree in  
16  Electrical Engineering. Subsequent to graduation, I was promoted to the position of  
17  Associate Engineer. Between 1993 and 1994, I completed graduate level courses in  
18  the study of power system transients and power system protection through the

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<sup>1</sup>In 2015, Northeast Utilities changed its name to Eversource Energy.

1       Engineering Outreach Program of the University of Idaho. By 1996 I had been  
2       promoted to the position of Senior Engineer.

3               In the employment of the Northeast Utilities Service Company, I was  
4       responsible for conducting thermal, voltage and stability analyses of the Northeast  
5       Utilities' transmission system to support planning and operating decisions. This  
6       involved the use of load flow, power system stability and production cost computer  
7       simulations. It also involved examination of potential solutions to operational and  
8       planning problems including, but not limited to, transmission line solutions and the  
9       routes that might be utilized by such transmission line solutions. Among the most  
10      notable achievements I had in this area include the solution of a transient stability  
11      problem near Millstone Nuclear Power Station, and the solution of a small signal (or  
12      dynamic) stability problem near Seabrook Nuclear Power Station. In 1993 I was  
13      awarded the Chairman's Award, Northeast Utilities' highest employee award, for my  
14      work involving stability analysis in the vicinity of Millstone Nuclear Power Station.

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

1           From 1990 to 1995, I also acted as an internal consultant to the Nuclear  
2           Electrical Engineering Department of Northeast Utilities. This included interactions  
3           with the electrical engineering personnel of the Connecticut Yankee, Millstone and  
4           Seabrook nuclear generation stations and inspectors from the Nuclear Regulatory  
5           Commission (“NRC”).

6           In addition to my technical responsibilities, from 1995 to 1997, I was also  
7           responsible for oversight of the day-to-day administration of Northeast Utilities' Open  
8           Access Transmission Tariff. This included the creation of Northeast Utilities' pre-  
9           FERC Order No. 889 transmission electronic bulletin board and the coordination of  
10          Northeast Utilities' transmission tariff filings prior to and after the issuance of Federal  
11          Energy Regulatory Commission (“FERC” or “Commission”) FERC Order No. 888. I  
12          was also responsible for spearheading the implementation of Northeast Utilities' Open  
13          Access Same-Time Information System and Northeast Utilities’ Standard of Conduct  
14          under FERC Order No. 889. During this time I represented Northeast Utilities on the  
15          Federal Energy Regulatory Commission's "What" Working Group on Real-Time  
16          Information Networks. Later I served as Vice Chairman of the NEPOOL OASIS  
17          Working Group and Co-Chair of the Joint Transmission Services Information  
18          Network Functional Process Committee. I also served for a brief time on the Electric  
19          Power Research Institute facilitated "How" Working Group on OASIS and the North  
20          American Electric Reliability Council facilitated Commercial Practices Working  
21          Group.

22          In 1997 I joined the firm of Brubaker & Associates, Inc. The firm includes  
23          consultants with backgrounds in accounting, engineering, economics, mathematics,

1 computer science and business. Since my employment with the firm, I have filed or  
2 presented testimony before the Federal Energy Regulatory Commission in Consumers  
3 Energy Company, Docket No. OA96-77-000; Midwest Independent Transmission  
4 System Operator, Inc., Docket No. ER98-1438-000; Montana Power Company,  
5 Docket No. ER98-2382-000; Inquiry Concerning the Commission's Policy on  
6 Independent System Operators, Docket No. PL98-5-003; SkyGen Energy LLC v.  
7 Southern Company Services, Inc., Docket No. EL00-77-000; Alliance Companies, et  
8 al., Docket No. EL02-65-000, et al.; Entergy Services, Inc., Docket No.  
9 ER01-2201-000; Remediating Undue Discrimination through Open Access  
10 Transmission Service, Standard Electricity Market Design, Docket No. RM01-12-000;  
11 Midwest Independent Transmission System Operator, Inc., Docket No. ER10-1791-  
12 000; NorthWestern Corporation, Docket No. ER10-1138-001, et al.; Illinois Industrial  
13 Energy Consumers v. Midcontinent Independent System Operator, Inc., Docket No.  
14 EL15-82-000; and Midcontinent Independent System Operator, Inc., Docket No.  
15 ER16-833-000 I have also filed or presented testimony before the Alberta Utilities  
16 Commission, Colorado Public Utilities Commission, Connecticut Department of  
17 Public Utility Control, Illinois Commerce Commission, the Indiana Utility Regulatory  
18 Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the  
19 Louisiana Public Service Commission, the Michigan Public Service Commission, the  
20 Missouri Public Service Commission, the Montana Public Service Commission, the  
21 New Mexico Public Regulation Commission, the Council of the City of New Orleans,  
22 the Oklahoma Corporation Commission, the Public Utility Commission of Texas, the  
23 Wisconsin Public Service Commission and various committees of the Missouri State

1       Legislature. This testimony has been given regarding a wide variety of issues  
2       including, but not limited to, ancillary service rates, avoided cost calculations,  
3       certification of public convenience and necessity, cost allocation, fuel adjustment  
4       clauses, fuel costs, generation interconnection, interruptible rates, market power,  
5       market structure, off-system sales, prudence, purchased power costs, resource  
6       planning, rate design, retail open access, standby rates, transmission losses,  
7       transmission planning and transmission line routing.

8               I have also participated on behalf of clients in the Southwest Power Pool  
9       Congestion Management System Working Group, the Alliance Market Development  
10      Advisory Group and several committees and working groups of the Midcontinent  
11      Independent System Operator, Inc. (“MISO”), including the Congestion Management  
12      Working Group, Economic Planning Users Group, Loss of Load Expectation Working  
13      Group, Regional Expansion, Criteria and Benefits Working Group and Resource  
14      Adequacy Subcommittee (formerly the Supply Adequacy Working Group). I am  
15      currently a member of the MISO Advisory Committee in the end-use customer sector  
16      on behalf of a group of industrial end-use customers in Illinois and a group of  
17      industrial end-use customers in Texas. I am also the past Chairman of the  
18      Issues/Solutions Subgroup of the MISO Revenue Sufficiency Guarantee (“RSG”)  
19      Task Force.

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

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

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ENTERGY NEW ORLEANS, INC.  
CITY OF NEW ORLEANS  
Docket No. UD-16-02

Response of: Entergy New Orleans, Inc.  
to the First Set of Data Requests  
of Requesting Party: Advisors to the Council  
of the City of New Orleans

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Question No.: Advisors 1-19

Part No.:

Addendum:

Question:

Please refer to the Direct Testimony of Charles W. Long, the answer to Question Q9 at page 7, which says “the exclusion of NOPS would likely involve the construction of multiple new transmission facilities into the greater New Orleans area, each of which would be difficult and costly to construct . . .”

- a. Please clarify what Mr. Long means by “difficult”.
- b. Please clarify what Mr. Long means by “costly”.
- c. Please provide copies of all Documents related to Mr. Long’s above referenced statement, including network planning documents, capital budgets, and operating budgets.
- d. Please identify the “likely” transmission facility construction projects, the combination of which would most likely satisfy NERC Standard TPL-001-4 in the most economical manner to ENO ratepayers.
- e. For each “likely” transmission facility Mr. Long references above, and identified in the answer to subpart “d”, please provide:
  - i. A description of the facility construction project, including points of network interconnection, line voltage, power rating, etc.
  - ii. An estimate of the total cost to construct the facility, including AFUDC.
  - iii. The expected effect upon system reliability if constructed.
  - iv. An estimate of the facility’s revenue requirement by year of operation, including a rate base estimate, an O&M estimate, and a depreciation schedule.



- v. An estimate of the facility's estimated revenues earned by ENO by year (i.e., payments by other parties and ultimately paid to ENO through MISO tariffs).
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Response:

- a. It is generally difficult to construct new transmission facilities in the DSG/New Orleans area for multiple reasons including poor soil conditions, high-wind design standards, land availability, and concentrated industrial, commercial, and residential development in the region.
- b. It is generally more costly, on a per-facility basis, to construct new transmission facilities in the DSG/New Orleans area for multiple reasons including poor soil conditions, high-wind design standards, land availability, and concentrated industrial, commercial, and residential development in the region.
- c. Information responsive to this request has been designated as Critical Energy Infrastructure Information (CEII) and will be produced only to the appropriate Reviewing Representatives in accordance with the CEII Confidentiality Agreement in effect in this docket.

The study files related to the network planning analysis that the Company used to identify the transmission upgrades that would be needed to meet the NERC TPL 001-4 reliability standard, should the NOPS not be constructed are provided in the attached CEII files. However, the Company has not yet performed detailed engineering assessments, including design and scoping work and constructability analyses, for the transmission projects that the Company expects would likely be needed to meet the NERC TPL 001-4 reliability standard, should the NOPS not be constructed. Mr. Long's statement referenced in the question was a general statement about the nature of the challenges associated with the construction of transmission facilities in the DSG/New Orleans region based on knowledge of the conditions that exist in that region and on transmission projects that have been constructed in the past in that region.

- d. The list of likely transmission upgrades that would be needed to meet the NERC TPL 001-4 reliability standard, should the NOPS not be constructed is provided in the attached.
- e.
- i. See the response to subpart (d).
  - ii. See the response to subpart (d).
  - iii. Each of the transmission projects listed in the spreadsheet referenced in the response to subpart (d) is needed to meet the

- NERC TPL 001-4 reliability standard, should the NOPS not be constructed.
- iv. See the response to subpart (c); the requested calculations have not been performed.
  - v. See the response to subpart (c); the requested calculations have not been performed.

Project	Voltage	Existing rating (A)	Desired rating (A)	Upgrade Line Length (miles)	Total Line Cost	Remote End Cost	Total Project Cost
Avenue C to Pauger Line Upgrade	115kV	1019	1700	10.5	\$15,750,000	\$50,000	\$15,800,000
Chalmette to Patterson Line Upgrade	115kV	885	1600	7.5	\$12,829,000	\$150,000	\$12,979,000
Pauger to Ponchartrain Park Line Upgrade	115kV	1019	1600	2.25	\$3,375,000	\$50,000	\$3,425,000
Gretna to Holiday Line Upgrade	115kV	1146	1600	3.3	\$4,950,000	\$125,000	\$5,075,000
Market Street to Notre Dame Line Upgrade	115kV	1019	1600-2000	1.5	\$2,250,000	\$125,000	\$2,375,000
Almonaster to Curran Line Upgrade	230kV	1108	2000	9	\$13,500,000	\$50,000	\$13,550,000
Southport to Joliet Line Upgrade	230kV	1608	2200	2.4	\$3,600,000	\$325,000	\$3,925,000
Goodhope to Destrehan Line Upgrade	230kV	1437	2000	5.3	\$8,480,000	\$50,000	\$8,530,000