

OCC EXHIBIT NO._____

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke)
Energy Ohio, Inc., for Approval of a)
General Exemption of Certain Natural Gas) Case No. 21-903-GA-EXM
Commodity Sales Services or Ancillary)
Services.)

In the Matter of the Application of Duke) Case No. 21-904-GA-ATA
Energy Ohio, Inc. for Tariff Approval.)

In the Matter of the Application of Duke)
Energy Ohio, Inc., for Approval to) Case No. 21-905-GA-AAM
Change Accounting Methods.)

**TESTIMONY RECOMMENDING MODIFICATION OF THE STIPULATION
OF
JATINDER KUMAR**

**On Behalf of
Office of the Ohio Consumers' Counsel**
*65 East State Street, Suite 700
Columbus, Ohio 43215*

September 7, 2023

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LIST OF ATTACHMENTS AND EXHIBITS:

Attachment JK-01

Attachment JK-02

Attachment JK-03

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PUCO Case No. 21-903-GA-EXM, et al.*

1 **I. EXPERIENCE AND QUALIFICATIONS**

2

3 ***Q1. PLEASE STATE YOUR NAME, EMPLOYMENT AND ADDRESS.***

4 ***A1.*** My name is Jatinder Kumar, and I am the President of Economic & Technical
5 Consultants, Inc, a public utility and energy consulting firm with offices at 9809
6 Korman Ct., Potomac, Maryland 20854.

7

8 ***Q2. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?***

9

10 ***A2.*** I am testifying on behalf of the Office of the Ohio Consumers' Counsel ("OCC").

11

12 ***Q3. PLEASE DESCRIBE YOUR EDUCATION, QUALIFICATIONS, AND***
13 ***EXPERIENCE.***

14

15 ***A3.*** I have a B.S. in Petroleum Technology, a Post Graduate Degree in Petroleum
16 Engineering, a M.S. in Mechanical Engineering, and have taken advance studies
17 towards a Ph.D. in engineering at the University of California, Berkeley. I have
18 also taken courses, among others, in Business Management, Corporate
19 Organization, Risk Analysis, Economics, Accounting, Management and
20 Organization, and Business Finance. Additionally, I have published articles,
21 presented seminars, and conducted training sessions on issues related to the
22 various regulatory aspects of the gas industry, utility accounting and taxation, and
23 utility regulation. I have been providing utility consulting services since 1972 and
24 have filed testimony/affidavits in more than 200 cases in 25 states, including
25 Ohio, before the Federal Energy Regulatory Commission ("FERC"), Interstate

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1 Commerce Commission, Nuclear Regulatory Commission, and State and Federal
2 Courts on all aspects of gas utilities and interstate gas and oil pipelines. I have
3 provided comments on behalf of my clients in many FERC rulemaking
4 proceedings, including those related to the gas industry and deregulation. My
5 education, qualifications, publications, and experience are appended to my
6 testimony.

7

8 **Q4. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE**
9 **PUBLIC UTILITIES COMMISSION OF OHIO (“PUCO”)?**

10

11 **A4.** Yes. I have testified in the following cases:

Utility	Case No.	Client
Toledo Edison Company	82-165-EL-EFC	OCC
East Ohio Gas Company	83-19-GA-GCR	OCC
Columbia Gas of Ohio	89-616-GA-AIR, et al.	OCC

12

13 **Q5. PLEASE BRIEFLY DESCRIBE YOUR EXPERIENCE WITH THE**
14 **COMPETITIVE GAS MARKET AND STORAGE AND BALANCING**
15 **ACTIVITIES.**

16

17 **A5.** I have been involved with all phases of the gas industry including deregulation
18 and the competitive gas market. In 1977-1978, I provided comments to the White
19 House that resulted in the development of the National Energy Act of 1978. The
20 Natural Gas Policy Act, which was a part of the National Energy Act, resulted in
21 the deregulation of wellhead gas prices. In 1981, I testified in the well-known
22 case, *City of Chanute, Kansas vs. William Gas Company*, 678 F. Supp. 1517 (D.
23 Kan. 1988). In this case the court determined that the gas industry is not immune
24 to antitrust law. In 1984, when FERC first implemented gas industry deregulation

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1 Order No. 436, the State of New Mexico implemented Open Access rules in the
2 State. I participated in developing the rules. I also provided comments in the
3 rulemaking process leading to the development of various FERC Orders leading
4 to the complete deregulation of the wholesale gas industry. In about 1986, I
5 assisted the US Department of Energy in execution of the first gas contract based
6 on the competitive bidding process. I have also been involved with the planning,
7 designing, operation, maintenance, and pricing of storage facilities and services.

8

9 **II. PURPOSE OF TESTIMONY**

10

11 ***Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS***
12 ***PROCEEDING?***

13

14 ***A6.*** On August 25, 2023, Duke Energy of Ohio (“Duke”), Interstate Gas Supply, LLC
15 (“IGS”), The Retail Energy Supply Association (“RESA”), Spire Marketing, Inc.
16 (“Spire”), and the PUCO’S Staff jointly submitted a Stipulation and
17 Recommendation (“Settlement”). The purpose of my testimony is to explain and
18 analyze the Settlement and to determine whether the Settlement meets the criteria
19 used by the PUCO when evaluating settlements as it relates to storage and
20 balancing costs that will be charged to consumers.

21

22 ***Q7. IN THE PREPARATION OF YOUR TESTIMONY WHAT DOCUMENTS***
23 ***DID YOU REVIEW?***

24

25 ***A7.*** The documents I reviewed included the following:

26

1. Company’s Application filed on April 27, 2022;

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2. Testimonies filed on September 7, 2022;
3. Stipulation and Recommendation Filed on August 25, 2023; and
4. The following Attachments filed with the Stipulation:
 - Attachment A- Sheet No. 43- Rate SSOS (Standard Service Offer Service);
 - Attachment B- Sheet No. 44- Rate FRAS (Full Requirements Aggregation Service);
 - Attachment C- Sheet No. 50- Rider EFBS (Enhanced Firm Balancing Service);
 - Attachment D- Sheet No. 72- Rider SSO (Standard Service Offer);
 - Attachment E- Sheet No. 74- Rider SSOCR (Standard Service Offer Cost Reconciliation Rider);
 - Attachment F- Sheet No. 78- Rider SBC (Storage Balancing Charge); and
 - Attachment G- Proposed Bill Format

III. PUCO'S SETTLEMENT APPROVAL CRITERIA

Q8. WHAT CRITERIA DOES THE PUCO RELY UPON FOR CONSIDERING WHETHER TO APPROVE A SETTLEMENT?

A8. It is my understanding that the PUCO will adopt a settlement only if it meets all of the three criteria delineated below. The PUCO must analyze the Settlement and decide the following:

- (1) Is the Settlement a product of serious bargaining among capable, knowledgeable parties representing diverse interests?

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1 (2) Does the Settlement, as a package, benefit consumers and the public
2 interest?

3 (3) Does the Settlement violate any important regulatory principles or
4 practices?

5

6 The focus of my testimony relates to Criteria Numbers 2 and 3. Below, I first
7 discuss Criterion No. 3 and then Criterion No. 2.

8

9 ***Q9. DOES THE SETTLEMENT FILED IN THIS PROCEEDING MEET***
10 ***CRITERIA NUMBERS 2 AND 3?***

11
12 ***A9.*** No.

13

14 ***Q10. FIRST EXPLAIN HOW DUKE CURRENTLY RECOVERS BALANCING***
15 ***FEES.***

16

17 ***A10.*** Page 5 of the Settlement states, “Duke Energy Ohio currently assesses balancing
18 fees for storage directly through the GCR. Further, Competitive Retail Natural
19 Gas Suppliers (“CRNGS”) providers currently pay for storage and balancing
20 through Rider Firm Balance Charge (“FBS”) and Rider Enhanced Firm Balance
21 Charge (“EFBS”), with all revenue being credited to the GCR. Choice Customers
22 served by CRNGS providers currently pay the balancing fees to the extent that the
23 CRNGS providers include what they pay as part of the Rider EFBS and Rider
24 FBS in the rates charged to their customers.”

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Q11. HOW DOES THE SETTLEMENT PROPOSE TO CHARGE FOR STORAGE AND BALANCING COSTS ("SBC")?

A11. On Page 6, The Stipulation states:

The Signatory Parties have agreed that Duke Energy Ohio shall modify its current assessment method for balancing fees and instead bill these charges directly to customers without markup. This would ensure all customers pay the same rider fee regardless of their shopping or non-shopping status. In order to accomplish that goal, the Signatory Parties have agreed to the following:

Thus, the Settlement will allow Duke to charge its consumers storage and balancing costs and exempt gas suppliers from these charges.

Q12. WILL THE SETTLEMENT RESULT IN DUKE FULLY EXITING THE MERCHANT FUNCTION?

A12. No, it will not. As the Application states, with Duke's exit of the merchant function the GCR is eliminated. (See Page 2 of the Application.) However, the Settlement puts the GCR back into the tariffs in the form of the Enhanced Firm Balancing Service, which will be charged to consumers and not to any gas suppliers.

Q13. CRITERIA NO. 3. DOES THE SETTLEMENT VIOLATE ANY IMPORTANT REGULATORY PRINCIPLES OR PRACTICES?

A13. Yes, the Settlement is in a gross violation of sound regulatory principles and practices.

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1 ***Q14. PLEASE EXPLAIN.***

2

3 ***A14.*** In my testimony below, I demonstrate that the Settlement violates all of the

4 following three regulatory principles:

5 1. Cost Causation Principle;

6 2. Utility Operational Risks; and

7 3. Necessary and adequate facilities and services at just and reasonable rates.

8

9 ***Q15. PLEASE EXPLAIN THE COST CAUSATION PRINCIPLE.***

10

11 ***A15.*** The cost causation principle requires that the entity causing a cost should pay for
12 the cost caused by the entity.

13

14 ***Q16. WILL THE SETTLEMENT RESULT IN CHARGING THE STORAGE AND***
15 ***BALANCING COSTS TO THOSE WHO CAUSE SUCH COSTS?***

16

17 ***A16.*** No. When a consumer buys gas from a supplier, the supplier is supposed to
18 supply gas to the consumer with all the necessary associated services (*e.g.*, gas
19 supplies, transmission to city gates or delivery points, nominations, and
20 balancing). A gas supplier's failure to match gas supplies with their consumer's
21 consumption causes an imbalance. The supplier should be responsible for the
22 imbalance related costs.

23

24 ***Q17. CAN CONSUMERS BALANCE CONSUMPTION WITH GAS SUPPLIES?***

25

26 ***A17.*** No, consumers have no control over the supplies and thus they cannot match gas
27 supplies with their consumption.

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1 **Q18. WHO SHOULD BE RESPONSIBLE FOR BALANCING GAS SUPPLIES**
2 **WITH GAS CONSUMPTION?**

3
4 **A18.** As consumers have no means to balance their gas consumption with supplies,
5 suppliers have to do so. Suppliers have the control and the responsibility of
6 supplying gas to match consumers' usage. Suppliers' failure to match gas supplies
7 with consumers' consumption causes imbalances. In the instant case, the
8 imbalance results in Duke's storage and balancing costs.

9
10 **Q19. HOW SHOULD A SUPPLIER BALANCE GAS SUPPLIES WITH GAS**
11 **CONSUMPTION?**

12
13 **A19.** The gas supplier should try to match supply with consumption on an hourly or at
14 least on a daily basis. If the supplier cannot do so, they can buy balancing services
15 from Duke and pay for the service. I realize that Duke does require balancing
16 services on a daily basis. But there are no penalties to suppliers if they fail to
17 balance on a daily basis.

18
19 **Q20. BESIDES SHIFTING THE COSTS FROM THOSE WHO CAUSE SUCH**
20 **COSTS TO CONSUMERS, WHAT IS THE OTHER CONSEQUENCE OF**
21 **SHIFTING COSTS?**

22
23 **A20.** Attachment B to the Settlement incorporates Duke's balancing provisions. Sheet
24 No. 44.1, Page 20 of Attachment B states, "The Company will reconcile
25 imbalances on an annual basis." This requires the gas suppliers to reconcile their
26 supplies with their consumers' consumption on an annual basis. Therefore, a
27 supplier could supply more gas to Duke on behalf of their consumers when prices
28 are low and supply less gas when prices are high. Suppliers could do so and still

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1 match supplies with consumers' consumption on an annual basis. In the
2 meantime, consumers get stuck with the imbalance charges. This potential gaming
3 of gas supplies by suppliers could cause substantial costs to consumers.

4
5 ***Q21. IS IT CORRECT THAT PAGE 19 OF 24 OF SHEET NO. 44.1 REQUIRES***
6 ***SUPPLIERS TO NOMINATE ON AN INTRADAY BASIS IF THE***
7 ***SUPPLIES DO NOT MATCH THE CONSUMPTION AT THE EARLIER***
8 ***NOMINATIONS? IS THAT NOT A SUFFICIENT PROVISION TO***
9 ***PROTECT CUSTOMERS?***

10
11 ***A21.*** No, it is not. First, the provision requires the suppliers to reconcile supplies on an
12 annual basis. Further, there is no penalty for suppliers' failure to change intraday
13 nominations and balance on a daily basis.

14
15 **UTILITY'S OPERATIONAL RISKS**

16
17 ***Q22. PLEASE EXPLAIN THE UTILITY'S OPERATIONAL RISK CRITERIA.***

18
19 ***A22.*** In setting the Return on Equity ("ROE"), a regulatory commission considers a
20 utility's operational and financial risks. This is one of the reasons the ROE is set
21 at a level much higher than the yield on Treasury bills, presumed to be risk free.
22 Thus, Duke and not consumers should be responsible for the system's operational
23 risks (such as imbalances).

1 **Q23. WHAT IS THE IMPACT ON OPERATIONAL RISK AS A CONSEQUENCE**
2 **OF THE SETTLEMENT?**

3
4 **A23.** The Settlement inappropriately shifts all the risks and costs associated with the
5 storage and balancing services to consumers.
6

7 **NECESSARY AND ADEQUATE FACILITIES AND SERVICES AT JUST AND**
8 **REASONABLE RATES**
9

10 **Q24. WILL THE SETTLEMENT RESULT IN NECESSARY AND ADEQUATE**
11 **FACILITIES AND SERVICES AT JUST AND REASONABLE RATES?**
12

13 **A24.** The Settlement may result in reliable service to consumers, but not at just and
14 reasonable rates.¹ Consumers will be required to pay a cost (for balancing) that
15 they do not cause and over which they have no control. In addition, Duke's annual
16 reconciliation provisions, which do not include a penalty, could result in
17 substantial costs to consumers.
18

19 **Q25. CRITERIA NO. 2. DOES THE SETTLEMENT, AS A PACKAGE, BENEFIT**
20 **CONSUMERS AND THE PUBLIC INTEREST?**
21

22 **A25.** No. As I described above, the Settlement shifts all the costs and risks associated
23 with imbalances onto consumers. But consumers do not cause the costs and risks
24 and they have no control over them. There are no solid benefits to consumers.

¹ See R.C. 4905.22.

1 **IV. CONCLUSIONS AND RECOMMENDATIONS**

2

3 ***Q26. WHAT ARE YOUR CONCLUSIONS?***

4

5 ***A26.*** As discussed above, the Settlement fails to conform with the two important
6 criteria established by PUCO for evaluating settlements. Thus, the Settlement
7 should be modified. The Settlement should be modified so that storage and
8 balancing fees are charged to the standard service offer suppliers and Choice
9 marketers, thus keeping the costs on the cost causers and avoiding the unfairness
10 of charging consumers for costs that they have no control over. There would be
11 no anti-competitive effects because both standard service offer suppliers and
12 marketers would pay for their own storage and balancing costs. Marketers can (as
13 they do now) build any storage and balancing costs into the prices that they
14 charge their consumers under their contracts. And standard service offer suppliers
15 can build storage and balancing costs into their standard service offer auction
16 bids.

17

18 ***Q27. DOES THAT CONCLUDE YOUR TESTIMONY?***

19

20 ***A27.*** Yes, it does.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Testimony Recommending Modification of the Stipulation of Jatinder Kumar on behalf of the Office of the Ohio Consumers' Counsel has been served upon those persons listed below via electronic service this 7th day of September 2023.

/s/ William J. Michael
William J. Michael
Assistant Consumers' Counsel

The PUCO's e-filing system will electronically serve notice of the filing of this document on the following parties:

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Qualifications and Experience
of
Jatinder Kumar

EDUCATION

B.S., Petroleum Technology, 1963, Indian School of Mines, Dhanbad, India

Diploma in French Language, 1965, Besancon University, France

Post Graduate Diploma, Petroleum Engineering, 1965, French Petroleum Institute, Paris, France

M.S., Mechanical Engineering, 1966, University of California, Berkeley

Advanced Studies toward Ph.D., Mechanical Engineering, 1969, University of California, Berkeley

Evening and correspondence courses: Business Management, Corporate Organization, Risk Analysis, Economics, Accounting, Management and Organization, Business Finance, Thermal Recovery of Petroleum, Technical Supervision, Operation Research, Waste Water Treatment, Corrosion, General Electric Time Share Computer Programming, Solid State Control, Instrumentation and Control, Log Interpretation, Properties and Application of Plastics, Supervisory Control, Spanish, German.

EXPERIENCE

President of Economic & Technical Consultants, Inc, December 1980 to present

Vice President, Associated Regulatory Consultants, April 1973, to November 1980

Utility Consultant Engineer, Van Scoyoc & Wiskup, Inc., September 1972 to April 1973

Design and Project Engineer, Pacific Gas & Electric Company of California, San Francisco, December 1969 to September 1972.

Staff Petroleum Engineer, Standard Oil Company of California, Bakersfield, California, August 1967 to August 1969

Assistant Engineer, University of California, Berkeley, August 1969 to December 1969

Research Assistant, University of California, Berkeley, October 1966 to August 1967

Extra Assistant Director, Indian Standards Institution, New Delhi, India, April 1964 to May 1965

Drilling Engineer, Oil India Ltd., India, January 1963 to April 1964

Senior Technical Assistant, Oil & Natural Gas Commission, India, August 1963 to December 1963

Mr. Kumar has appeared in more than 200 proceedings before FERC, ICC, 25 retail jurisdictions in USA, two retail jurisdictions in Canada, two pollution control boards, and thirteen judicial proceedings as an expert witness in the matters relating to public utilities and energy matters; electric and gas restructuring, unbundling, competition, merger/acquisition, ISO/RTO issues, incentive rate making; gas and electric power acquisition and transmission; competition, anti-trust and "price-squeeze" issues; contracting and buyouts; ratemaking and operation issues; accounting, economic, regulatory and technical matters. He has been involved with most of the important FERC rulemakings for the gas and electric utilities since the 1970s. Mr. Kumar has advised the White House as well as advised a member of the Senate Sub-Committee on Energy on energy-related matters. Besides his experience in the utility consulting business, Mr. Kumar

served as an alternate member of the Pipeline Committee of the International Standards Organization. He has working knowledge in the areas of utility operations; power plant installation; oil and gas production and reserve estimation; drilling; underground gas storage; designing technical facilities; project engineering and evaluation; environmental control; supply and demand analysis of various fuel supplies; feasibility of alternative fuels; and management efficiency studies. He has also assisted a number of clients in the acquisition of financing, wholesale and retail electric and gas supplies, transportation services, and gas storage services. He has authored more than 30 technical papers. Mr. Kumar is listed in the 1996 Edition of Marquis Who's Who in Finance and Industry.

MEMBERSHIPS

The National Association of Accountants

The Society of Petroleum Engineers

American Society of Mechanical Engineers

Registered Professional Engineer in the States of Maryland and Virginia

Representative Publications and Program Appearances

I. Representative Publications

"Nuclear Magnetic Relaxation Time of Water in a Porous Medium with Heterogeneous Surface Wettability", Journal of Applied Physics, Vol. 40, No. 10, September 1969, p.4165 (with Dr. I. Fatt and Dr. D.N. Saraf).

"Nuclear Magnetic Resonance Study of Porosity, Permeability and Surface Area of Unconsolidated Porous Materials", The Log Analyst, January-February 1970, p. 13 (with Dr. I. Fatt).

"Rating Alternatives to Chromates in Cooling Water Treatment", Chemical Engineering, April 26, 1976, p.111.

"Specified Surface of Porous Materials", Society of Petroleum Engineer Journal, March 1970, p.4 (with Dr. I. Fatt).

"Determination of Wettability of Porous Materials by the Nuclear Magnetic Resonance Techniques", Indian Journal of Technology, Vol. 8, April 1970, p. 125 (with Dr. D.N. Saraf and Dr. I. Fatt).

"Determination of Specific Permeability from Electric Logs", World Oil, February 1, 1971, p.38.

"Nuclear Magnetic Relaxation Time of Blood and Blood Velocity", Science, Vol. 175, February 18, 1972, p.794 (with V. Kumar, M.D.)

"Selecting and Installing Synthetic Pond Linings", Chemical Engineering, Vol. 1, No. 3, February 5, 1963, p. 67 (with Mr. J.A. Jedlicka).

"Quick Visual Comparison of Fuel Values", Chemical Engineering, February 18, 1974, p.156.

Comments on Cost Allocation, Public Utilities Fortnightly, February 17, 1977, Volume 99, No. 4, page 5.

Comments on Impact of Tax Reform Act, Public Utilities Fortnightly, June 25, 1987.

Natural Gas Transportation and Transportation Rates, Journal of Petroleum Technology, Vol. 40, No. 2, page 237.

II. Representative Program Appearances

"Synthetic Liners for Ponds", presented at 1976 Water and Wastewater Equipment Manufacturers Association Conference at Houston, April 1, 1976.

"Corrosion of Subsurfaces Equipment in Producing Oil and Gas Wells", presented at a Seminar, University of California, Berkeley, February 1967.

"Problems of Steam Recovery", presented at a Seminar, University of California, Berkeley, February 1967.

"Role of Explosives in Petroleum Industry", presented at High Explosives Corporation of India Silver Jubilee Seminar, March 1965.

"Effects of Poisson's Ratio on Rock Properties", presented at the Society of Petroleum Engineers 51st Annual Fall Meeting, New Orleans, October 3-6, 1976.

"The Role of Anaerobic Digestion for the Production of Methane from Municipal Waste", presented at 1976 American Society of Mechanical Engineers Solid Waste Processing Conference at Boston, May 23, 26, 1976.

"Trends in Natural Gas Regulation" (with John W. Griggs), presented at the Society of Petroleum Engineers 59th Annual Technical Conference held in Houston, September 19, 1984.

Open Access for Alternate Gas Supplies (Orders 436 and 500). Presented a speech at the annual meeting of the National Association of Gas Consumers, Lake of the Ozarks, MO, October 29, 1987.

"Gas Market Restructuring through Regulation and Legislations". Presented at the Society of Petroleum Engineers 63rd Annual Conference held in Houston, Texas, on October 3-5, 1988.

Important Points for Gas Acquisition and Contract. A speech presented at the Annual Conference of National Association of Gas Consumers, October 19, 1988.

"Solution of Blasius Flow Equation by Electronic Analog Computers".

"Estimation of Thermal Conductivity of Porous Materials", Part I and Part II, American Petroleum Institute Project Report, 1970 (with Prof. W. H. Somerton).

Impact of FERC's Rate Design Policy Statement. Presented at NASUCA's meeting held in June 1990 at Santa Fe, New Mexico.

"Tax Implications of Utility Restructuring", presented at NASUCA's Semi Annual Conference, Charleston, SC, June, 1997.

"Gas Marketing Restructuring through Regulations and Legislations", presented at the Society of Petroleum Agencies meeting in New York, December 7, 1988.

"Engineering Aspects of Gas from Wellhead to Burntip", presented at a conference arranged by the District of Columbia Office of People's Counsel, (1989)

"Natural Gas Contracting", presented at the International Power Conference, Tampa, Florida, February 1992.

"Tax Implications of Utility Deregulation", presented at Michigan State University's Annual Conference, Williamsburg, VA, December 3, 1997.

"Independent System Operators (ISO), Issues and Impact on Electric Market", presented at International Power Conference, Dallas, TX, December 10, 1997.

"Electronic Trade" Presented at the G20 Meeting in Jamaica, 2000.

"Impact of Regulations on Electric Distribution Market", CIRED Conference, Stockholm, Sweden, June 2013.

"Impact of Federal Gas Regulations on Wholesale and Retail Gas Markets and Prices", Power-Gen Natural Gas Conference, Columbus, Ohio, August 26, 2016.

"Tax Cut and Jobs Act, 2017, Impact on Utilities Rates" NASUCA Mid Year Conference, Minneapolis, June 26, 2018.

III. Other Reports and Studies Prepared

Offshore oil spills

"Summary and Explanation of FERC Order 436". Prepared for Department of Energy, March 1986.

Gas from Eastern U.S. Shale, prepared for Gulf Oil Company.

Summary of Court Order Remanding and Vacating FERC Order 436.

Summary of FERC Order 500.

"Alternatives in Permeability of Sandstones after Super-Cooling", Research Report, Indian School of Mines, Dhanbad, India, May 1963.

A comparative Study of Gas Pipeline Flow Equations.

Working Capital for Electric Utilities.

Correlations: Types and Applications in Public Utilities.

Future Gas Marketing Strategies

Cost of Service Manual for Electric Utilities prepared for Bonneville Power Administration (with Edgar H. Bernstein and Ken Robertson)

Summary of Amendment to Clean Air Act.

Summary of FERC Order 592, Ref. Merger Policy

Summary of FERC Order 636, Ref. Gas Industry Restructuring

Price Indexing in Gas Industry

Evaluation of Formulae Used for Gas Flows Through Pipelines

Summary of FERC Orders 888, 888 A and 888 B, Ref. Electric Industry Restructuring

Brief Description of Electric Utility Ratemaking Process

How Electric Utilities Rates Can Be Made More Competitive Through Ratemaking

Problems with ISO Locational Marginal Pricing

How ISO Can Perform "Balancing Only" Function?

Electric Price Forecast, Prepared for US Department of Energy

Summary of Order 2000, Ref. RTO Formation

Rate Design and Cost of Service Presentation

Depreciation in Utility Rate Making Presentations

REC Price Forecast for Texas Prepared for US Department of Energy

Detailed Analysis of Impact of Tax Cuts and Job Act on Utilities Rates

Representative Publications

"Nuclear Magnetic Relaxation Time of Water in a Porous Medium with Heterogeneous Surface Wettability", Journal of Applied Physics, Vol. 40, No. 10, September 1969, p.4165 (with Dr. I. Fatt and Dr. D.N. Saraf).

"Nuclear Magnetic Resonance Study of Porosity, Permeability and Surface Area of Unconsolidated Porous Materials", The Log Analyst, January-February 1970, p. 13 (with Dr. I. Fatt).

"Rating Alternatives to Chromates in Cooling Water Treatment", Chemical Engineering, April 26, 1976, p.111.

"Specified Surface of Porous Materials", Society of Petroleum Engineer Journal, March 1970, p.4 (with Dr. I. Fatt).

"Determination of Wettability of Porous Materials by the Nuclear Magnetic Resonance Techniques", Indian Journal of Technology, Vol. 8, April 1970, p. 125 (with Dr. D.N. Saraf and Dr. I. Fatt).

"Determination of Specific Permeability from Electric Logs", World Oil, February 1, 1971, p.38.

"Nuclear Magnetic Relaxation Time of Blood and Blood Velocity", Science, Vol. 175, February 18, 1972, p.794 (with V. Kumar, M.D.)

"Selecting and Installing Synthetic Pond Linings", Chemical Engineering, Vol. 1, No. 3, February 5, 1963, p. 67 (with Mr. J.A. Jedlicka).

"Quick Visual Comparison of Fuel Values", Chemical Engineering, February 18, 1974, p.156.

Comments on Cost Allocation, Public Utilities Fortnightly, February 17, 1977, Volume 99, No. 4, page 5.

Comments on Impact of Tax Reform Act, Public Utilities Fortnightly, June 25, 1987.

Natural Gas Transportation and Transportation Rates, Journal of Petroleum Technology, Vol. 40, No. 2, page 237.

TESTIMONIES SUBMITTED
During 2011-2015

Future Test Period Rulemaking	12-00029-UT	New Mexico
PPL Utilities Co. (Annual Update)	ER09-1148	FERC
Delmarva Power & Light (Annual Update)	ER09-1158	FERC
Midwest ISO (Protocols)	EL12-35-000	FERC
DP&L/PHI Complaint	EL13-48-000	FERC
Public Service of New Mexico	10-00086-UT	New Mexico
Ameren (WDS Rate)	ER11-2788	FERC
Delvarva Power & Light (Annual Transmission Update)	ER09-1158	FERC
Vermont Gas Systems	7970	Vermont PSC
Delmarva Power & Light (Annual Update)	ER09-1158	FERC
NMGC/TECO (Gas Utility Sale)	13-00231-UT	New Mexico
Public Service Company of New Mexico (Abandonment)	13-00390-UT	New Mexico
MISO ROE Complaint	EL12-48	FERC

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Case No(s). 21-0903-GA-EXM, 21-0904-GA-ATA, 21-0905-GA-AAM

Summary: Testimony Testimony Recommending Modification of the Stipulation of
Jatinder Kumar on Behalf of the Office of the Ohio Consumers' Counsel
electronically filed by Ms. Alana M. Noward on behalf of Michael, William J..