
**STATE OF OHIO
BEFORE THE
PUBLIC UTILITIES COMMISSION**

In the Matter of the Application of Ohio Edison)	
Company, The Cleveland Electric Illuminating)	
Company and The Toledo Edison Company for)	Case Nos. 09-1947-EL-POR
Approval of Their Energy Efficiency and Peak)	09-1948-EL-POR
Demand Reduction Program Portfolio Plans for)	09-1949-EL-POR
2010 through 2012 and Associated Cost Recovery)	
Mechanisms)	
In the Matter of the Application of Ohio Edison)	
Company, The Cleveland Electric Illuminating)	Case Nos. 09-1942-EL-EEC
Company and The Toledo Edison Company for)	09-1943-EL-EEC
Approval of Their Initial Benchmark Reports)	09-1944-EL-EEC
In the Matter of the Energy Efficiency and Peak)	
Demand Reduction Program Portfolio of Ohio)	Case Nos. 09-580-EL-EEC
Edison Company, The Cleveland Electric)	09-581-EL-EEC
Illuminating Company and The Toledo Edison)	09-582-EL-EEC
Company)	

**DIRECT TESTIMONY OF
DR. DENNIS W. GOINS
ON BEHALF OF NUCOR STEEL MARION**

February 17, 2010

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NUCOR STEEL MARION**

INTRODUCTION AND QUALIFICATIONS

1
2 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**
3 **ADDRESS.**

4 **A.** My name is Dennis W. Goins. I operate Potomac Management Group, an
5 economics and management consulting firm. My business address is 5801
6 Westchester Street, Alexandria, Virginia 22310.

1 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND**
2 **PROFESSIONAL BACKGROUND.**

3 **A.** I received a Ph.D. degree in economics and a Master of Economics degree
4 from North Carolina State University. I also earned a B.A. degree with
5 honors in economics from Wake Forest University. Following graduate
6 school I worked as a staff economist at the North Carolina Utilities
7 Commission (NCUC). During my tenure at the NCUC, I testified in
8 numerous cases involving electric, gas, and telephone utilities on such
9 issues as cost of service, rate design, intercorporate transactions, and load
10 forecasting. While at the NCUC, I also served as a member of the
11 Ratemaking Task Force in the national Electric Utility Rate Design Study
12 sponsored by the Electric Power Research Institute (EPRI) and the
13 National Association of Regulatory Utility Commissioners (NARUC).

14 Since leaving the NCUC, I have worked as an economic and
15 management consultant to firms and organizations in the private and
16 public sectors. My assignments focus primarily on market structure,
17 policy, planning, and pricing issues involving firms that operate in energy
18 markets. For example, I have conducted detailed analyses of product
19 pricing, cost of service, rate design, and interutility planning, operations,
20 and pricing; prepared analyses related to utility mergers, transmission
21 access and pricing, and the emergence of competitive markets; evaluated
22 and developed regulatory incentive mechanisms applicable to utility
23 operations; and assisted clients in analyzing and negotiating interchange
24 agreements and power and fuel supply contracts. I have also assisted
25 clients on electric power market restructuring issues in Arkansas, New
26 Jersey, New York, South Carolina, Texas, and Virginia.

27 I have submitted testimony and affidavits and provided technical
28 assistance in more than 150 proceedings before state and federal agencies
29 as an expert in competitive market issues, regulatory policy, utility
30 planning and operating practices, cost of service, and rate design. These

1 agencies include the Federal Energy Regulatory Commission (FERC), the
2 Government Accountability Office, the First Judicial District Court of
3 Montana, the Circuit Court of Kanawha County, West Virginia, and
4 regulatory agencies in Alabama, Arizona, Arkansas, Colorado, Florida,
5 Georgia, Hawaii, Idaho, Illinois, Indiana, Kentucky, Louisiana, Maine,
6 Maryland, Massachusetts, Minnesota, Mississippi, New Jersey, New
7 York, North Carolina, Ohio, Oklahoma, South Carolina, Texas, Utah,
8 Vermont, Virginia, West Virginia, and the District of Columbia.
9 Additional details of my educational and professional background are
10 presented in the Appendix.

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

13 **A.** I am appearing on behalf of Nucor Steel Marion, Inc., which is located in
14 Marion, Ohio. The Nucor facility—a large retail industrial consumer
15 served by Ohio Edison Company under Rate GT—produces steel by
16 recycling steel scrap in electric arc furnaces.

17 **Q. WHAT ASSIGNMENT WERE YOU GIVEN WHEN YOU WERE**
18 **RETAINED?**

19 **A.** I was asked to undertake two primary tasks:

- 20 1. Review the energy efficiency (EE) and peak demand reduction
21 (PDR) program portfolio filing, associated cost-recovery
22 mechanisms, and initial benchmark reports filed by Ohio Edison
23 Company, Cleveland Electric Illuminating Company, and Toledo
24 Edison Company—collectively, FirstEnergy, focusing on issues
25 related to rates and service (particularly interruptible rates) for GT
26 customers.
- 27 2. Identify any major deficiencies in FirstEnergy's application, and
28 recommend necessary changes.

1 ELR and OLR at the end of its current ESP in mid-2011 with a
2 request for proposal (RFP) process into which customers will bid
3 their interruptible load. In Case No. 09-906-SSO, several
4 parties—including Nucor—have recommended continuing Riders
5 ELR and OLR past their current mid-2011 expiration date and
6 allowing them to become permanent interruptible rate offerings. I
7 offered detailed testimony on that issue in the MRO proceeding. I
8 also identified necessary improvements to FirstEnergy's proposed
9 peak demand reduction RFP that would complement existing
10 interruptible rates. In the MRO case, only FirstEnergy has
11 supported eliminating Riders ELR and OLR in 2011 and replacing
12 them with the RFP.

- 13 2. FirstEnergy appropriately recognizes that interruptible load under
14 Riders ELR and OLR provides peak demand reduction benefits
15 that should count toward meeting the peak demand reduction
16 benchmarks of Revised Code § 4928.66.
- 17 3. In analyzing the benefits and costs of its proposed EE and PDR
18 programs—including the IDR program, FirstEnergy used the Total
19 Resource Cost (TRC) test. Riders ELR and OLR are rates that the
20 Commission has determined to be just and reasonable. Applying a
21 TRC test to interruptible rates (or any other rate design) that the
22 Commission has reviewed and approved is unnecessary and
23 problematic—particularly given the way FirstEnergy applied the
24 TRC test.
- 25 4. Even if it were appropriate to apply a TRC test to interruptible
26 Riders ELR and OLR, the TRC test that FirstEnergy applied to
27 these rates differs significantly from the TRC test described in the
28 Commission's rules and in the *California Standard Practice*
29 *Manual*. FirstEnergy's TRC analysis simply understates the
30 benefits of interruptible load. In addition, FirstEnergy's TRC

- 1 analysis does not address significant interruptible load benefits that
2 the Commission recognized in approving Riders ELR and OLR,
3 including long-run avoided supply costs, enhanced reliability, and
4 the promotion of economic development.
- 5 5. FirstEnergy calculated TRC values for the IDR program in 2010-
6 2012 even though its proposed RFP auction program has not been
7 approved, will not become effective until mid-2011 if it is
8 approved, and has produced no costs or available interruptible load
9 on which FirstEnergy could conduct a TRC analysis. As a result,
10 FirstEnergy's 2011 and 2012 TRC results for the IDR program are
11 meaningless at this point and should be ignored.
- 12 6. In estimating peak demand reductions from its IDR program,
13 FirstEnergy adopted a measurement approach that understates the
14 PDR value of Riders ELR and OLR. Specifically, FirstEnergy
15 limited its estimate of available interruptible load to the average of
16 the difference between interruptible customers' maximum
17 demands and firm contract demands between 3 p.m. and 6 p.m.,
18 Monday through Friday, during June-September 2009. Using this
19 technique, FirstEnergy estimated that its total available
20 interruptible load from the IDR program is 147 MW.² The daily
21 measurement period that FirstEnergy used differs significantly
22 from the 11 a.m.-5 p.m. EST (12 p.m.-6 p.m. EDST) non-holiday
23 weekday period the Commission approved for use in Rider ELR to
24 measure a customer's curtailable (interruptible) load. In
25 estimating the IDR program's PDR potential, FirstEnergy should
26 have been consistent with Rider ELR and used the difference
27 between a customer's maximum demand and firm contract demand

² Ohio Edison Company, *Energy Efficiency & Peak Demand Reduction Program Portfolio and Initial Benchmark Report*, December 19, 2009, at 26, OE Table 11. The estimated available interruptible load was 31.7 MW for Ohio Edison, 33.4 MW for Cleveland Electric, and 81.9 MW for Toledo Edison.

1 in the peak measurement period, which is a more accurate measure
2 of benefits that interruptible load provides. Without the right to
3 interrupt an interruptible customer, FirstEnergy would have to
4 stand ready to serve the customer's maximum demand whenever it
5 occurs. However, because the customer is interruptible,
6 FirstEnergy only has to stand ready to serve the customer's firm
7 load. The difference between a customer's maximum peak
8 demand and firm load—not average demand and firm load—is a
9 more reasonable measure of the peak demand reduction benefits
10 that FirstEnergy obtains through its IDR program.

11 7. In developing Rider DSE2 charges under its Rider DSE to recover
12 its estimated EE/PDR program costs, FirstEnergy first assigned
13 sector costs to related rate schedules. (For example, Residential
14 sector EE/PDR costs were assigned to the RS rate.) If sector costs
15 are related to more than one rate schedule, such sector costs were
16 allocated to related rate schedules on the basis of forecast kWh
17 usage for each schedule. (For example, Mercantile Utility - Large
18 Enterprise costs were allocated to rate schedules GP, GSU, and GT
19 on the basis of forecast 2010 kWh usage by customers served
20 under each rate.) FirstEnergy also plans to reconcile EE/PDR
21 program costs by rate class to mitigate potential interclass
22 subsidies. This approach attempts to align cost responsibility with
23 benefits directly received by customers. However, the approach
24 has serious drawbacks since it:

- 25 ■ Provides no direct linkage between benefits received and
26 program costs paid within a class—thereby creating the
27 potential for large intraclass subsidies.

- 1 ■ Explicitly ignores capacity benefits in its EE/PDR programs,
2 thereby forcing high load factor customers to subsidize low
3 load factor customers within a class.
- 4 ■ Imposes significant rate impacts on large customers that not
5 only are unrelated to EE/PDR benefits they receive, but also
6 may have unintended—and unmeasured—consequences.
- 7 8. FirstEnergy is seeking approval for each operating company to
8 earn an incentive on its EE/PDR programs equal to 15 percent of
9 the net benefits in excess of the company's required benchmarks.
10 FirstEnergy fails to justify adequately its proposed shared-savings
11 incentive mechanism. Instead, FirstEnergy merely notes that it is
12 allowed to request an EE/PDR portfolio incentive and other Ohio
13 utilities have requested such incentives.
- 14 9. FirstEnergy proposes to count peak demand reduction from its
15 energy efficiency programs toward meeting the PDR benchmarks.
16 This creates the possibility that in the future FirstEnergy may
17 claim that it achieves all the peak demand reduction it needs
18 through energy efficiency programs alone, thereby obviating the
19 need for rates and programs—particularly interruptible rates—
20 specifically designed to provide peak demand reduction. Such an
21 outcome would be unreasonable given differences in the peak
22 demand reduction values of and system benefits attributable to
23 PDR and EE programs.

24 **RECOMMENDATIONS**

25 **Q. WHAT DO YOU RECOMMEND ON THE BASIS OF THESE**
26 **CONCLUSIONS?**

27 **A. I recommend that the Commission:**

- 1 1. Defer to Case No. 09-906-SSO or other future standard service
2 offer (MRO or ESP) rate proceedings consideration of the
3 structure, pricing, terms and conditions of FirstEnergy's
4 interruptible rates, and specifically Riders ELR and OLR after the
5 end of the current ESP. Since these are rate options, they should
6 be developed and approved in rate proceedings; moreover, these
7 issues and issues related to the proposed RFP have already been
8 fully debated in the pending MRO case. In the current proceeding,
9 consideration of Riders ELR and OLR should be limited to
10 findings related to their PDR values. This recommendation is
11 consistent with FirstEnergy's acknowledgment in response to
12 discovery that in this case it is only seeking approval to include
13 results from the IDR program as part of its compliance with
14 benchmark requirements under Revised Code § 4928.66(A).³
15 2. Determine that FirstEnergy may use Rider ELR and OLR
16 interruptible load toward meeting its peak demand reduction
17 benchmarks under Revised Code § 4928.66(A).
18 3. Determine that a TRC test should not be applied to interruptible
19 rates in general, and to Riders ELR and OLR in particular, since
20 the Commission has already approved those rates as just and
21 reasonable.
22 4. Reject FirstEnergy's TRC test results for its IDR program if the
23 Commission determines that a TRC test should apply to Riders
24 ELR and OLR. If the Commission decides that a TRC test is
25 appropriate for the IDR program, at a minimum FirstEnergy should
26 be required to reflect the long-run avoided supply costs (including
27 generation, transmission, distribution, and energy-related avoided
28 costs), which I estimate to be \$173.80 per kW-year, in its TRC

³ See FirstEnergy's response to Nucor 1 DR-16(a) and (c). I have included a copy of this response and other relevant FirstEnergy discovery responses in this case in Exhibit Goins-1.

- 1 analyses instead of only short-term market prices for generation
2 capacity that are reflected in its application.
- 3 3. Require FirstEnergy to use the definition of Curtailable Load in
4 Rider ELR in determining the PDR value of its IDR program.
5 That is, PDR values should reflect the difference between a
6 customer's maximum demand and firm contract demand measured
7 from 11 a.m.-5 p.m. on non-holiday weekdays.
- 8 4. With respect to EE/PDR program costs assigned/allocated to C&I
9 rate classes (that is, Rates GP, GSU, and GT) through DSE2
10 charges, require FirstEnergy to:
- 11 ■ Classify PDR costs assigned/allocated to each rate class as
12 demand-related costs. In this case, EE costs should be
13 classified as 50 percent demand and 50 percent energy.
- 14 ■ Modify the DSE2 component of Rider DSE to include a
15 demand charge to recover demand-related EE/PDR costs, and
16 an energy charge to recover all assigned/allocated EE costs
17 classified as energy.
- 18 ■ Limit the aggregate impact of DSE2 charges on any GT
19 customer. I recommend a monthly cap on DSE2 charges for
20 Ohio Edison's GT customers of \$3,000 per customer (\$36,000
21 per year) as a reasonable approach to achieve this objective.
- 22 5. Reject FirstEnergy's request for a shared-savings incentive.
23 FirstEnergy has provided no persuasive evidence that its proposed
24 incentive mechanism is reasonable, necessary, or in the public
25 interest.
- 26 6. Require FirstEnergy to continue offering rates and programs
27 designed to provide peak demand reduction benefits, including
28 interruptible rates, even if it can largely or even exclusively
29 achieve the benchmark peak demand reductions through its energy
30 efficiency programs.

1 **INTERRUPTIBLE**
2 **RIDERS ELR AND OLR**

3 **Q. DID FIRSTENERGY INCLUDE EXISTING INTERRUPTIBLE**
4 **RATES AS PART OF ITS EE/PDR PORTFOLIOS?**

5 **A.** Yes. FirstEnergy included the IDR program as a subset of the Mercantile-
6 Utility (Large Enterprise) class of EE/PDR programs for large C&I
7 customers. The IDR program consists of FirstEnergy's existing
8 interruptible rates -- Riders ELR and OLR.

9 **Q. HAS THE COMMISSION PREVIOUSLY DETERMINED THAT**
10 **THESE INTERRUPTIBLE RIDERS ARE JUST AND**
11 **REASONABLE PRICING MECHANISMS FOR INTERRUPTIBLE**
12 **SERVICE?**

13 **A.** Yes. Both riders and their predecessors have been approved by the
14 Commission as just and reasonable rates for interruptible service. Riders
15 ELR and OLR were approved as part of FirstEnergy's current ESP rate
16 plan in Case No. 08-935-EL-SSO.

17 **Q. IN THIS PROCEEDING, IS FIRSTENERGY REQUESTING THE**
18 **COMMISSION'S APPROVAL TO CONTINUE RIDERS ELR AND**
19 **OLR FOR THE BALANCE OF THE ESP RATE PLAN, OR TO**
20 **REPLACE THOSE RATES WITH AN RFP BID PROCESS WHEN**
21 **THE ESP TERMINATES?**

22 **A.** No. With respect to continuing Riders ELR and OLR for the term of the
23 current ESP, FirstEnergy has stated that "[t]he Companies are only
24 seeking approval in this proceeding to include the *results* of the ELR/OLR

1 program for purposes of compliance with R.C. 4928.66(A) benchmarks.”⁴
2 With respect to replacing Riders ELR and OLR with an RFP bid process
3 at the end of the current ESP rate plan, FirstEnergy has stated that “[t]he
4 Companies are only seeking approval in this proceeding to include the
5 *results* of the Interruptible RFP program (however it is ultimately
6 approved in the MRO proceeding) for purposes of compliance with R.C.
7 4928.66(A) benchmarks.”⁵

8 **Q. SHOULD THIS PROCEEDING ADDRESS ANY ASPECT OF**
9 **FIRSTENERGY’S EXISTING AND PROPOSED INTERRUPTIBLE**
10 **RATES/PROGRAMS OTHER THAN HOW THEY ARE USED TO**
11 **MEET THE STATUTORY PEAK DEMAND REDUCTION**
12 **BENCHMARKS?**

13 **A.** No. There is no need in the current case to evaluate the structure,
14 operation, and pricing of Riders ELR and OLR because these rates have
15 already been approved for the term of the current ESP rate plan. Further,
16 the merits of FirstEnergy’s proposal to let Riders ELR and OLR expire at
17 the end of the current ESP and to replace those rates with an Interruptible
18 RFP have already been litigated in the MRO proceeding, and should not
19 be re-litigated here. Even if those issues are not ultimately resolved in the
20 current MRO proceeding, they should be reserved for FirstEnergy’s next
21 standard service offer (MRO or ESP) rate filing. The expiration of
22 FirstEnergy’s current interruptible rates and their replacement are rate
23 issues that are more appropriately addressed in a rate case rather than in an
24 energy efficiency/peak demand reduction portfolio proceeding.

⁴ Exhibit Goins-1, FirstEnergy Response to Nucor Set 1 DR-16.

⁵ *Id.*

1 **Q. IF THE COMMISSION DECIDES TO CONSIDER THE**
2 **STRUCTURE, OPERATION, AND PRICING OF RIDERS ELR**
3 **AND OLR IN THIS CASE, WOULD YOUR TESTIMONY ON**
4 **THESE ISSUES BE THE SAME AS YOUR TESTIMONY IN THE**
5 **MRO CASE?**

6 **A.** Yes. If the Commission decides to scrutinize FirstEnergy's IDR program,
7 the Commission should include in its evaluation my direct testimony in
8 the MRO case, Case 09-906-EL-SSO.⁶ I demonstrated in my testimony in
9 the MRO case that credits reflected in the existing riders significantly
10 understate the avoided capacity and energy supply costs attributable to
11 interruptible load. This implies that both riders are cost effective and
12 should pass any reasonable benefit-cost test if properly applied -- in fact, I
13 recommended in that case that the Commission consider increasing the
14 credits for both Riders to more closely approximate avoided cost. In
15 addition, my MRO testimony showed that FirstEnergy's plan to initiate an
16 RFP bid process as the exclusive approach to acquire interruptible load in
17 mid-2011 was ill-defined, and likely to lead to a bad result—the demise of
18 retail interruptible load on FirstEnergy's system.⁷ I also recommended
19 important improvements to the RFP program so that it can be used to
20 supplement and complement current interruptible rates (Riders ELR and
21 OLR).

⁶ I have attached selected sections of my MRO testimony dealing with interruptible rate issues as Exhibit Goins-2. Portions of this testimony that were stricken as hearsay in that case are stricken-through in the attached excerpts and the excerpts also reflect several minor corrections I made to my testimony on the stand at the MRO hearing. See pages 11-34 and Exhibits DWG-1 and DWG-2 of that testimony for comprehensive evidence on interruptible issues.

⁷ *Id.* at 18-25 and 32-34.

1 **Q. SHOULD FIRSTENERGY BE ALLOWED TO COUNT**
2 **INTERRUPTIBLE LOAD TOWARD MEETING ITS PEAK**
3 **DEMAND REDUCTION BENCHMARKS?**

4 **A.** Yes. Interruptible load provides significant peak demand reduction
5 benefits. This is particularly the case for a permanent interruptible rate
6 that provides long-term avoided capacity cost benefits. The Commission
7 has recognized that interruptible load can be used to meet the statutory
8 peak demand reduction benchmarks regardless whether such load is
9 actually interrupted at the time of the system peak.⁸ I have some
10 disagreements (discussed further below) with applying a TRC test to
11 Riders ELR and OLR, and FirstEnergy's methodology for measuring the
12 level of peak demand reduction provided by Rider ELR. However, I agree
13 with FirstEnergy that it is appropriate to count its interruptible load toward
14 meeting its peak demand reduction benchmarks.

15 **APPLICATION OF TRC TEST TO**
16 **INTERRUPTIBLE RATES**

17 **Q. ARE UTILITIES REQUIRED TO DEMONSTRATE THE COST-**
18 **EFFECTIVENESS OF THEIR EE/PDR PORTFOLIOS?**

19 **A.** Yes. Under provisions of O.A.C. 4901.1-39-04(B), an electric utility must
20 demonstrate that its EE/PDR portfolio is cost-effective on an aggregate
21 (portfolio) basis. A utility must also demonstrate that each program in the
22 portfolio is cost-effective, except the utility may include a program in its
23 portfolio that is not cost-effective if the program provides "substantial
24 non-energy benefits." A demonstration of the cost-effectiveness of each
25 measure included in an EE/PDR portfolio is not required.

⁸ O.A.C. 4901:1-39-05(E)(2).

1 **Q. HOW DID FIRSTENERGY TEST THE COST-EFFECTIVENESS**
2 **OF ITS EE/PDR PORTFOLIOS?**

3 **A.** FirstEnergy used the TRC test to analyze the benefits and costs of its
4 proposed EE and PDR programs—including the IDR program. According
5 to results from these TRC tests, FirstEnergy found that each company's
6 EE/PDR portfolio was cost-effective.⁹

7 **Q. DO FIRSTENERGY'S TRC TESTS INDICATE THAT THE IDR**
8 **PROGRAM IS COST-EFFECTIVE DURING THE 2010-2012**
9 **EVALUATION PERIOD?**

10 **A.** No. FirstEnergy's TRC analysis showed that the IDR program is cost-
11 effective in 2010 (that is, has a TRC value greater than 1), but not cost-
12 effective in 2011 and 2012.

13 **Q. DID FIRSTENERGY PROPERLY ANALYZE THE IDR**
14 **PROGRAM USING THE TRC TEST?**

15 **A.** No. First, it is neither necessary nor appropriate to apply a TRC test to an
16 existing interruptible rate such as Rider ELR. In addition, even if the
17 Commission determines that it is appropriate to apply a TRC test to an
18 interruptible rate, FirstEnergy used incorrect assumptions in applying the
19 TRC test—resulting in an incorrect TRC value for the IDR program.
20 Despite these problems, FirstEnergy recognizes that a TRC value less than
21 1 in any given year should not preclude using interruptible load to meet
22 the peak demand reduction benchmarks.

23 **Q SHOULD A TRC TEST BE APPLIED TO AN INTERRUPTIBLE**
24 **RATE SUCH AS RIDERS ELR AND OLR?**

25 **A.** No. Applying a TRC test to an interruptible rate is neither necessary nor
26 appropriate. The Commission has already found Riders ELR and OLR to

⁹ Direct Testimony of George L. Fitzpatrick, at 13.

1 be just and reasonable. These rates are part of FirstEnergy's current
2 standard service offer rate plan. Whether these rates should be continued
3 or replaced after the end of the current ESP in 2011 has been raised and
4 litigated in FirstEnergy's MRO proceeding. These facts amply
5 demonstrate that the need and justification for Riders ELR and OLR have
6 been carefully scrutinized, and do not need to be addressed in this energy
7 efficiency and peak demand reduction portfolio proceeding. Interruptible
8 rates—like other retail rate forms—are subject to the Commission's
9 ratemaking standards. Applying a TRC or other cost-effectiveness test to
10 such rates in this proceeding is at best unnecessary and duplicative, and at
11 worst misleading and confusing.

12 As I testified in the MRO proceeding, interruptible rates provide
13 benefits beyond just the peak demand reduction benefits that are a primary
14 focus of this portfolio proceeding. These additional benefits include
15 reliability, energy cost savings, and economic development benefits. A
16 TRC test—including FirstEnergy's in this case—ignores these additional
17 benefits. If necessary, the Commission should waive any requirement for
18 a TRC test applied to FirstEnergy's interruptible rates—including Riders
19 ELR and OLR.

20 **Q. IF THE COMMISSION DETERMINES THAT THE TRC TEST**
21 **MUST BE APPLIED TO AN INTERRUPTIBLE RATE, SHOULD**
22 **IT ACCEPT THE TRC RESULTS OF FIRSTENERGY'S**
23 **ANALYSIS OF THE IDR PROGRAM?**

24 **A.** No. FirstEnergy's TRC analysis of the IDR program is flawed because it
25 focuses on short-term rather than long-term avoided capacity costs, and
26 also ignores other avoided cost savings attributable to interruptible load.
27 In addition, by not expanding its TRC analysis into a Societal Test that
28 includes job development and retention benefits recognized by the

1 Commission in setting interruptible credits, FirstEnergy ensured that the
2 cost-effectiveness of its IDR program would be understated.

3 **Q. DID FIRSTENERGY CONDUCT TRC TESTS ON ITS IDR**
4 **PROGRAM FOR 2011 AND 2012 WHEN IT EXPECTS ITS NEW**
5 **RFP BID PROCESS WILL BE IN EFFECT?**

6 **A.** Yes. FirstEnergy conducted TRC tests for its IDR program in 2010-2012.
7 In its current MRO case, FirstEnergy has asked the Commission to replace
8 Riders ELR and OLR with an RFP bid process when the riders expire in
9 mid-2011. Several parties in that case—including Nucor—have asked the
10 Commission to reject FirstEnergy's RFP plan, retain the existing ELR and
11 OLR riders past their mid-2011 expiration, and make these riders
12 permanent.

13 **Q. DO FIRSTENERGY'S TRC RESULTS FOR 2011 AND 2012**
14 **PROVIDE ANY VALUE?**

15 **A.** No. These TRC results are premised on an RFP bid process that has not
16 been approved, will not become effective until mid-2011 if it is approved,
17 and has produced no costs or available interruptible load on which
18 FirstEnergy could conduct a TRC analysis. As a result, the 2011 and 2012
19 TRC results for the IDR program are meaningless and should be ignored.

20 **Q. WHAT ARE SOME OF THE MAJOR DEFICIENCIES IN**
21 **FIRSTENERGY'S TRC ANALYSIS OF THE IDR PROGRAM?**

22 **A.** I have not conducted a comprehensive evaluation to identify all of the
23 deficiencies in FirstEnergy's TRC analysis of the IDR program.
24 However, several major deficiencies are obvious. For example,
25 FirstEnergy's TRC analysis:

26 ■ Ignores long-run avoided costs, and instead focuses on short-
27 run market prices of generating capacity. As I pointed out in

1 my MRO testimony, interruptible load enables a supplier to
2 avoid the long-run marginal cost of capacity—not the short-
3 run market price of capacity that FirstEnergy uses as a proxy
4 for avoided capacity costs. A more appropriate measure of
5 avoided generating capacity costs is the annual cost of a new
6 combustion turbine, including fixed operating and
7 maintenance costs. PJM has adopted this approach in its
8 Reliability Pricing Model (RPM) construct, which uses an
9 administratively-set *cost of new entry* (CONE) value to
10 represent the minimum capacity payment required to induce
11 new capacity to enter the market. PJM's tariff defines CONE
12 as the nominal levelized cost of a combustion turbine
13 generating station.¹⁰ The most recent estimates of CONE
14 were finalized and approved by FERC in 2009 for 2012-2013.
15 PJM's CONE was set at \$112,868 per MW-year, or \$112.87
16 per kW-year.¹¹ Adjusting this value to reflect the avoided
17 capacity reserves attributable to interruptible load yields a
18 higher value—for example, \$129.80 per kW-year at an
19 assumed 15-percent reserve margin. This estimate of long-run
20 avoided generation capacity does not reflect additional
21 transmission and distribution capacity cost savings as well as
22 energy cost savings that may be associated with interruptible
23 load.¹²

- 24 ■ Completely ignores avoided energy costs attributable to Rider
25 ELR interruptible load.

¹⁰ PJM Tariff, Attachment DD at sections 2.16 and 2.58.

¹¹ *Id.* at section 5.10(a)(iv).

¹² FirstEnergy assumes that T&D avoided costs are \$20 per kW-year.

- 1 ■ Assumes the existence of the RFP bid process in 2011-2012,
2 even though that bid process does not exist and is being
3 contested in the current MRO case.
- 4 ■ Differs from the TRC test described in the Commission's rules
5 and the *California Standard Practice Manual*. In particular,
6 instead of evaluating the IDR program over some reasonable
7 measure life, FirstEnergy simply assumes that the IDR
8 program has a one-year life. Because FirstEnergy has had
9 some form of interruptible rates for years, a one-year life is an
10 unreasonable assumption. Moreover, if the Commission
11 approves Nucor's recommendation in the MRO proceeding to
12 make Riders ELR and OLR permanent, the measure life of the
13 IDR program would be well beyond one year.

14 **Q. HOW DO THE AVOIDED CAPACITY COST VALUES**
15 **FIRSTENERGY USED IN ITS TRC ANALYSIS OF THE IDR**
16 **PROGRAM COMPARE TO LONG-RUN AVOIDED CAPACITY**
17 **COSTS?**

18 **A.** The values are well below reasonable estimates of long-run avoided
19 capacity costs. FirstEnergy's estimated avoided capacity costs include
20 proxies for the short-run price of generating capacity, plus an estimated
21 \$20 per kW-year for avoided transmission and distribution costs. These
22 values—shown in Table 1 below—range from \$46.92-\$94.85 per kW-year
23 in 2010-2012.

Table 1. FirstEnergy's Avoided Capacity Cost Estimates

Avoided Capacity Cost (\$/kW-yr)	2010	2011	2012
Generation	\$26.92	\$33.00	\$74.01
T&D	20.00	20.00	20.84
Total	\$46.92	\$53.00	\$94.85

Source: Exhibit DWG-1, Response to Nucor Set 1 DR-4, worksheet
Avoid Costs-Ohv2.xls.

In contrast, PJM's current projected CONE is \$112.87 per kW-year, excluding any adjustment for avoided reserve margins and T&D costs. Adding a 15 percent adjustment to reflect avoided reserve margins and a \$20 per kW-year T&D adjustment (FirstEnergy's estimate) to PJM's CONE yields a \$149.80 per kW-year adjusted estimate of FirstEnergy's long-run avoided capacity costs. In my judgment, this \$149.80 per kW-year value is a reasonable estimate to use for avoided capacity cost in any TRC of FirstEnergy's interruptible rates. In other words, the capacity values FirstEnergy used in its TRC analysis are significantly understated. In addition, any TRC test of Rider ELR should reflect not only my estimated long-run avoided capacity cost, but also a reasonable estimate of avoided energy cost (\$24.00 per kW-year). This implies a total long-run avoided supply cost of \$173.80 per kW-year attributable to FirstEnergy's interruptible Rider ELR.

Q. DESPITE YOUR RESERVATIONS ABOUT THE TRC TEST, WOULD INCLUDING AN APPROPRIATE ESTIMATE OF LONG-RUN AVOIDED SUPPLY COSTS CHANGE FIRSTENERGY'S TRC RESULTS?

A. Yes. Substituting my \$173.80 per kW-year estimate of long-run avoided supply costs in FirstEnergy's TRC analysis of the IDR program would

1 cause the program's TRC value (calculated using FirstEnergy's approach)
2 to exceed 1.00 not only in 2010, but also in 2011 and 2012. As I noted
3 earlier, FirstEnergy's TRC analysis of the IDR program showed a TRC
4 value greater than 1.00 only in 2010.

5 **Q. WHAT DO YOU RECOMMEND?**

6 **A.** I recommend that the Commission reject FirstEnergy's TRC test for the
7 IDR program in general and Rider ELR in particular. FirstEnergy's TRC
8 analyses for the IDR program are improperly structured, incorrectly
9 calculated, and applied to program elements that neither exist nor have
10 been approved for implementation. If the Commission decides a TRC test
11 is appropriate, at a minimum FirstEnergy should be required to reflect in
12 its TRC analyses the long-run avoided supply costs (including generation,
13 transmission, and distribution avoided costs) that I have identified. I
14 further recommend that the PJM CONE value, adjusted for avoided
15 reserve margins, be used as a proxy for avoided generating capacity costs.
16 Finally, any TRC test of Rider ELR should include an estimate of avoided
17 energy costs to reflect benefits related to FirstEnergy's right to call
18 economic interruptions.

19 **Q. DO YOU HAVE ANY ADDITIONAL OBSERVATIONS ON THE**
20 **APPLICABILITY OF A TRC TEST TO INTERRUPTIBLE RATES?**

21 **A.** Yes. FirstEnergy's TRC analysis is clearly biased by its reliance on short-
22 run market prices as a proxy for avoided generation capacity costs and by
23 temporary downward pressure on these market prices. Market data from
24 which FirstEnergy derived its 2010-2010 avoided capacity cost estimates
25 show that post-2012 market prices are expected to be significantly higher
26 than 2010 prices. As a result, one would expect that post-2012 TRC
27 analyses of FirstEnergy's Riders ELR and OLR would show much higher
28 TRC values than the 2010-2012 values shown in FirstEnergy's filing.

1 **PEAK DEMAND REDUCTIONS**
2 **ATTRIBUTABLE TO INTERRUPTIBLE RATES**

3 **Q. HOW DID FIRSTENERGY ESTIMATE THE AMOUNT OF**
4 **INTERRUPTIBLE LOAD AVAILABLE TO MEET ITS**
5 **BENCHMARK REQUIREMENTS?**

6 **A.** FirstEnergy measured the maximum hourly loads of its 44 interruptible
7 customers from 3 p.m.-6 p.m., Monday-Friday, during June-August 2009.
8 FirstEnergy then defined available interruptible load as the average of the
9 difference between each customer's hourly maximum demand and firm
10 contract demand. Using this technique, FirstEnergy estimated that its total
11 available interruptible load from the IDR program is 147 MW.

12 **Q. IS FIRSTENERGY'S ESTIMATION TECHNIQUE**
13 **REASONABLE?**

14 **A.** No. FirstEnergy's approach substantially understates the PDR value of its
15 IDR program. First, the hourly measurement period is too narrow, and is
16 inconsistent with the period used to determine Curtailable Load under
17 Rider ELR. Second, averaging demands over a narrow time period
18 implicitly assumes that only the customer's average interruptible demand
19 will be on line when a curtailment event occurs. In my opinion, it is more
20 reasonable to assume that a customer's demand on line at the time of a
21 curtailment event is the customer's maximum demand. Further, even if a
22 customer's demand is below its maximum demand at the exact moment of
23 interruption, the customer is precluded from increasing its demand up to
24 or above its peak demand for the length of the curtailment, which the
25 customer otherwise has the right to do. In this case, interruptible load
26 available for curtailment equals maximum demand less firm contract
27 demand.

1 **Q. HOW CAN FIRSTENERGY'S ESTIMATION TECHNIQUE BE**
2 **IMPROVED?**

3 **A.** A simple but important change would be to require FirstEnergy to use the
4 definition of Curtailable Load in Rider ELR in estimating the PDR value
5 of its IDR program. That is, available PDR interruptible load should
6 reflect the difference between an interruptible customer's maximum
7 demand and firm contract demand in the peak measurement period of 11
8 a.m.-5 p.m. EST (12 p.m.-6 p.m. EDST) on non-holiday weekdays. A
9 reasonable approach to applying this concept would be for FirstEnergy to
10 add together the Curtailable Load for each Rider ELR customer to produce
11 a total monthly Rider ELR Curtailable Load. FirstEnergy can then
12 average the total Rider ELR Curtailable Loads for the summer months
13 (June, July, and August) to calculate the PDR value for Rider ELR
14 interruptible load for a given year.

15 **Q. DID FIRSTENERGY COUNT PEAK DEMAND REDUCTIONS**
16 **FROM ENERGY EFFICIENCY PROGRAMS IN MEETING THE**
17 **PDR BENCHMARKS?**

18 **A.** Yes. The statutory requirements for peak demand reductions are unclear
19 whether such reductions may be met entirely through PDR programs,
20 energy efficiency programs that produce ancillary peak demand reduction
21 benefits, or a combination of PDR and EE programs. My concern is that
22 FirstEnergy may use this ambiguity in the future to justify relying entirely
23 on energy efficiency programs to meet its peak demand reduction
24 benchmarks instead of relying on such PDR programs as interruptible
25 rates.

26 Unlike energy efficiency programs, peak demand reduction rates and
27 programs like Rider ELR and the residential direct load control program
28 provide enhanced reliability benefits and capacity savings since
29 FirstEnergy can essentially dispatch these nonfirm loads not only during

1 summer peak periods, but also when emergency conditions occur on the
2 generation, transmission, or distribution systems. The timing and success
3 of peak demand reduction from energy efficiency programs is far less
4 certain and provides no emergency benefits. For this reason alone, the
5 Commission should require FirstEnergy to maintain robust interruptible
6 rates and other programs that provide direct and certain peak demand
7 reduction benefits, regardless of the amount of ancillary peak demand
8 reduction benefits attributable to its energy efficiency programs.

9 **ALLOCATION AND RECOVERY OF**
10 **EE/PDR PROGRAM COSTS**

11 **Q. HOW DOES FIRSTENERGY PROPOSE TO RECOVER ITS**
12 **EE/PDR PROGRAM COSTS?**

13 **A.** FirstEnergy proposes using Rider DSE to recover these costs. Rider DSE
14 has two separate kWh charges that are separately calculated and stated for
15 rate schedules RS, GS, GP, GSU, GT, STL, TRF, and POL:

- 16 ■ DSE1 charge to recover credits paid to customers served
17 under Riders ELR and OLR.
- 18 ■ DSE2 charge to recover all EE/PDR program costs other than
19 those recovered through the DSE1 charge. The current DSE2
20 charge is \$0.00 per kWh.

21 My testimony on cost recovery focuses on the proposed methodology for
22 developing DSE2 charges.

23 **Q. HOW DID FIRSTENERGY DEVELOP ITS PROPOSED RIDER**
24 **DSE2 CHARGES IN THIS CASE?**

25 **A.** FirstEnergy first assigned sector costs by company to related rate
26 schedules. (For example, Ohio Edison's Residential sector EE/PDR costs
27 were assigned to Ohio Edison's RS rate.) Sector costs related to more
28 than one rate schedule were allocated to related rate schedules on the basis

1 of forecast 2010 kWh usage for each schedule. (For example, Mercantile
2 Utility - Large Enterprise costs were allocated to rate schedules GP, GSU,
3 and GT on the basis of forecast 2010 kWh usage by customers served
4 under each rate.) After assigning or allocating its expected EE/PDR
5 program costs (adjusted for the Commercial Activity Tax), FirstEnergy
6 divided these costs by forecast kWh sales by rate schedule in 2010. The
7 resulting Rider DSE charges are shown in Exhibits SEO-C1, SEO-C2, and
8 SEO-C3 in the direct testimony of FirstEnergy witness Steven E. Ouellette
9 (Ouellette Direct).

10 **Q. DOES FIRSTENERGY PLAN TO RECONCILE EE/PDR**
11 **PROGRAM COSTS THROUGH DSE2 CHARGES TO MITIGATE**
12 **POTENTIAL INTERCLASS SUBSIDIES?**

13 **A.** Yes. FirstEnergy's energy (kWh) allocation approach creates the potential
14 for large interclass subsidies among rate schedules (for example, GP,
15 GSU, and GT customers that are allocated Mercantile Utility - Large
16 Enterprise costs). To address this problem, FirstEnergy proposes a
17 reconciliation method designed to ensure that class-specific program costs
18 are properly assigned to and collected from various rate classes
19 (schedules).¹³

20 **Q. DO YOU AGREE WITH FIRSTENERGY'S PROPOSED**
21 **RECOVERY METHOD THROUGH DSE2 CHARGES FOR ITS**
22 **EE/PDR PROGRAM COSTS?**

23 **A.** No. The cost reconciliation approach that FirstEnergy proposes properly
24 attempts to align cost responsibility with benefits directly received by each
25 major customer class (defined by rate schedule). However, using an
26 energy allocator to divide EE/PDR program costs among the GP, GSU,
27 and GT classes initially does not match the ultimate reconciliation

¹³ Ouellette Direct at 10-11.

1 approach very well, creating the potential for substantial and unnecessary
2 fluctuations in DSE2 charges. In addition, Rider DSE's kWh-based cost
3 recovery is inconsistent with the general purpose of FirstEnergy's
4 proposed cost allocation and reconciliation method, and has other serious
5 drawbacks. For example, the kWh cost recovery approach for these rate
6 classes:

- 7 ■ Provides no direct linkage between benefits received and
8 program costs paid within a class—thereby creating the
9 potential for large intraclass subsidies. From a conceptual
10 viewpoint, ratemaking fairness and general principles of cost-
11 responsibility dictate that a customer's share of FirstEnergy's
12 EE/PDR program costs should correspond to the incremental
13 system benefits the customer receives from the programs.
14 However, FirstEnergy has not shown any direct linkage
15 between a customer's energy use and costs paid through Rider
16 DSE and the customer's share of incremental system benefits
17 produced by class-specific EE/PDR programs.
- 18 ■ Explicitly ignores capacity/peak reduction benefits from its
19 EE/PDR programs. As a result, Rider DSE's kWh-based cost
20 recovery will force high load factor customers to subsidize
21 low load factor customers within a class.
- 22 ■ Imposes significant rate impacts on large customers that not
23 only are unrelated to EE/PDR benefits they receive, but also
24 may have unintended—and unmeasured—consequences. For
25 example, the proposed DSE2 charge for an Ohio Edison GT
26 customer is \$0.000460 per kWh—a seemingly relatively small
27 charge. However, this DSE2 charge would have a significant
28 impact on a customer using a large amount of electricity. For
29 example, it would increase the annual delivery service bill of a
30 50-MW, 70-percent load factor GT customer by

1 approximately \$141,000—the annualized cost of two full-time
2 employees earning up to \$50,000 per year. The pursuit of
3 energy efficiency and peak demand reductions should be
4 tempered by the potential impacts on jobs and employment in
5 Ohio.

6 **Q. WHAT CAN BE DONE TO ADDRESS THESE DRAWBACKS?**

7 **A.** The drawbacks in FirstEnergy’s cost assignment/allocation and recovery
8 approach through its DSE2 charges are magnified for large C&I
9 customers—especially GT customers with high kWh usage. As a result, I
10 have focused on potential remedies directed at these customers. To
11 address the drawbacks in FirstEnergy’s rate design approach, I
12 recommend a demand and energy classification and rate design/cost
13 recovery approach combined with a monthly cap on Rider DSE2
14 payments. Specifically, I recommend that the Commission require
15 FirstEnergy to:

- 16 ■ Classify each C&I rate class’ PDR costs as demand-related
17 costs.
- 18 ■ Classify EE costs as demand- or energy-related costs as
19 appropriate. A significant portion of EE costs should be
20 classified as demand to reflect the implicit capacity cost
21 component in market energy prices, as well as the peak
22 demand reductions that FirstEnergy attributes to EE programs.
23 I have not made a specific determination of the appropriate
24 demand-energy split for EE costs in this case. As a result,
25 unless FirstEnergy can provide a more reasonable
26 classification scheme, I recommend that 50 percent of C&I EE
27 costs be classified as demand, and 50 percent classified as
28 energy.

- 1 ■ Modify the DSE2 component of Rider DSE to include a
2 demand charge to recover demand-related EE/PDR costs
3 allocated or assigned to the class, and an energy charge to
4 recover all assigned/allocated EE costs classified as energy.
- 5 ■ Limit the aggregate impact of DSE2 charges on any C&I
6 customer. One approach would be to establish a monthly cap
7 on DSE2 charges. For Ohio Edison GT customers I
8 recommend a monthly cap of \$3,000 per customer (\$36,000
9 per year).¹⁴ DSE2 demand and energy charges in each
10 program year for the GT class should be adjusted
11 proportionately to reflect any cost-recovery adjustments
12 necessitated by the \$3,000 monthly DSE2 cap per customer. I
13 also recommended that any increase in the monthly cap for a
14 rate class in a future EE/PDR program year be limited to the
15 percentage increase in the class' EE/PDR programs costs from
16 the preceding year or 10 percent, whichever is less.

17 **Q. SHOULD THE DEMAND COMPONENT OF YOUR**
18 **RECOMMENDED DSE2 RATE STRUCTURE BE APPLICABLE**
19 **ONLY TO FIRM DEMANDS?**

20 **A.** Yes. The demand-related DSE2 costs under my recommended approach
21 reflect costs that FirstEnergy incurs to avoid capacity-related costs of
22 serving firm demands—not interruptible demands. As a result, like DSE1
23 charges that do not apply to customers taking service under Riders ELR
24 and OLR, the demand component of the DSE2 charge should apply only
25 to firm demands.

¹⁴ See Exhibit SEO-C1, which shows that FirstEnergy has allocated \$2,105,133 in total EE/PDR costs for Ohio Edison's GT customers in 2010—an average of about \$986 per customer per month. My proposed cap is more than 3 times this amount. As I noted earlier, I have not developed recommended monthly DSE2 caps for Ohio Edison's GP and GSU customers or for any rate classes served by the other operating companies.

1 **SHARED SAVINGS**

2 **Q. HAS FIRSTENERGY PROPOSED INCENTIVE PAYMENTS**
3 **RELATED TO EACH OPERATING COMPANY'S EE/PDR**
4 **PROGRAMS?**

5 **A.** Yes. FirstEnergy has asked the Commission to allow each operating
6 company to earn an incentive on its EE/PDR programs equal to 15 percent
7 of the net benefits in excess of the company's required benchmarks.
8 These incentive payments will be treated as EE/PDR program costs and
9 recovered through Rider DSE. FirstEnergy refers to this incentive
10 mechanism as shared savings.

11 **Q. DID FIRSTENERGY PROVIDE ANY EMPIRICAL SUPPORT FOR**
12 **ITS SHARED SAVINGS INCENTIVE?**

13 **A.** No. FirstEnergy offers no empirical analysis or justification to support its
14 proposed shared-savings incentive mechanism. FirstEnergy simply notes
15 that it is allowed to request an EE/PDR portfolio incentive. FirstEnergy
16 also notes that other Ohio utilities have requested incentives linked to their
17 EE/PDR portfolios. Finally, FirstEnergy warns that it will not seek to
18 achieve any savings above those reflected in the statutory benchmarks
19 unless it receives the shared savings incentive.¹⁵

20 **Q. SHOULD FIRSTENERGY'S SHARED SAVINGS INCENTIVE BE**
21 **APPROVED?**

22 **A.** No. FirstEnergy has provided no evidence that retail customers would
23 materially benefit if a shared-savings mechanism were applied to all
24 incremental capacity and energy savings above the statutory benchmarks.
25 FirstEnergy has not even demonstrated why a 15-percent incentive is
26 reasonable. In addition, the incentive mechanism is also asymmetrical,

¹⁵ See FirstEnergy's response to Nucor 1-17(i) in Exhibit Goins-1.

1 since FirstEnergy has not proposed incurring direct penalties if the
2 operating companies fail to achieve their benchmark savings estimates. If
3 the Commission believes that EE and PDR in excess of the benchmarks is
4 reasonable and necessary, than the Commission should simply order
5 FirstEnergy to acquire more. A further incentive should not be required.
6 The Commission should reject FirstEnergy's proposed shared-savings
7 incentive.

8 **Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?**

9 **A. Yes.**

**STATE OF OHIO
BEFORE THE
PUBLIC UTILITIES COMMISSION**

In the Matter of the Application of Ohio Edison)	
Company, The Cleveland Electric Illuminating)	
Company and The Toledo Edison Company for)	Case Nos. 09-1947-EL-POR
Approval of Their Energy Efficiency and Peak)	09-1948-EL-POR
Demand Reduction Program Portfolio Plans for)	09-1949-EL-POR
2010 through 2012 and Associated Cost Recovery)	
Mechanisms)	

In the Matter of the Application of Ohio Edison)	
Company, The Cleveland Electric Illuminating)	Case Nos. 09-1942-EL-EEC
Company and The Toledo Edison Company for)	09-1943-EL-EEC
Approval of Their Initial Benchmark Reports)	09-1944-EL-EEC

In the Matter of the Energy Efficiency and Peak)	
Demand Reduction Program Portfolio of Ohio)	Case Nos. 09-580-EL-EEC
Edison Company, The Cleveland Electric)	09-581-EL-EEC
Illuminating Company and The Toledo Edison)	09-582-EL-EEC
Company)	

**EXHIBITS TO THE
DIRECT TESTIMONY OF
DR. DENNIS W. GOINS
ON BEHALF OF NUCOR STEEL MARION**

February 17, 2010

EXHIBIT GOINS-1

FIRSTENERGY'S RESPONSES TO SELECTED NUCOR DISCOVERY REQUESTS

Case No. 09-1947-EL-POR, Case No. 09-1948-EL-POR, Case No. 09-1949-EL-POR, et al

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2010 through 2012 and Associated Cost Recovery Mechanisms

RESPONSES TO DATA REQUESTS

Nucor Set 1 Regarding avoided capacity cost estimates used in the TRC test:
DR-4

- (a) For each year from 2010 through 2030, for as far out as available, provide the estimated avoided capacity cost per kW.
- (b) Explain in detail how such costs were obtained, developed and/or calculated.
- (c) Provide a detailed workpaper showing the calculation of these costs.
- (d) Identify and provide all assumptions made and all source documents for any information included in the calculations or used to develop the avoided capacity cost estimate.
- (e) Identify and provide all calculations, studies, analyses or other documents used in the development or derivation of these costs.

Response:

- (a) The detailed B&V model which supports the values and costs in the filing has been made available to parties, subject to a non-disclosure agreement (NDA). Nucor was provided this information on January 20, 2010.
- (b) The explanation on how FirstEnergy calculated the avoided costs in this proceeding is outline in the three filed plans in Section 8.1.
- (c) The avoided costs work papers are attached under the name "Avoid Costs–Ohv2.xls".
- (d) See answer (b) and the attached file referred to in (c)
- (e) See answer (b) and the attached file referred to in (c)

Inflation Based on Moody's Forecast

	99%	1.0143074	1.04190999	1.06109561	1.0777423	1.10017565	1.12382082	1.14796492	1.17269223
Base Case EIA Data:	2009	2010	2011	2012	2013	2014	2015	2016	2017
Low Price EIA Data:	63	54	57	57	58	59	61	64	67
	69	61	60	60	60	61	63	65	68
Base Case CIN (RTC) Equivalent:	37.08	40.09	41.89	42.10	42.80	43.92	45.22	47.26	49.49
Low Price CIN (RTC) Equivalent:	38.84	45.11	44.18	43.72	44.28	44.87	46.03	47.79	49.96
Avoid									
Base Inflated Energy	37.08	40.66	43.64	44.67	46.13	48.32	50.82	54.26	58.04
Base Inflated Peak (MW/Day)			136.81	202.77	270.75	272.58	273.00	273.00	273.00
Base Inflated Peak (KW/yr)		26.92	33.00	74.01	98.82	99.49	99.65	99.65	99.65
T&D	20.00	20.00	20.00	20.84	21.22	21.55	22.93	23.85	24.74
Avoid Peak Costs	20.00	46.92	53.00	94.85	120.05	121.05	122.57	123.49	124.39

Nominal \$ (Inflated Using CPI)	
	Official 2008 PJM Capacity
2009	106.70
2010	144.19
2011	136.81
2012	202.77
2013	270.75
2014	272.58
2015	273.00
2016	273.00
2017	273.00
2018	276.19
2019	281.71
2020	287.34
2021	293.09
2022	298.95
2023	304.93
2024	311.03
2025	311.03
2026	311.03

1.19793758	1.22358537	1.24985002	1.27685575	1.30442087	1.33251377	1.36106662	1.3902184	1.41982587	1.44991531
2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
70	73	77	81	84	87	89	91	93	97
71	74	77	79	81	84	86	89	91	94
51.87	54.08	56.88	59.60	62.05	63.93	65.62	67.05	68.69	71.42
52.14	54.34	56.39	57.88	59.71	61.49	62.95	65.05	66.93	68.66
62.13	66.17	71.09	76.10	80.94	85.18	89.31	93.22	93.22	93.22
276.19	281.71	287.34	293.09	298.95	304.93	311.03	311.03	311.03	-
100.81	102.82	104.88	106.98	109.12	111.30	113.53	113.53	113.53	-
26.88	28.57	30.28	33.60	36.48	39.49	44.78	49.65	54.90	63.57
127.69	131.39	135.16	140.58	145.60	150.79	158.30	163.18	168.43	63.57

Case No. 09-1947-EL-POR, Case No. 09-1948-EL-POR, Case No. 09-1949-EL-POR, et al

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2010 through 2012 and Associated Cost Recovery Mechanisms

RESPONSES TO DATA REQUESTS

Nucor Set 1 Regarding the reflection of avoided losses in the TRC test:
DR-5

- (a) Does FirstEnergy reflect avoided losses in the TRC test related to avoided capacity costs?
- (b) Does FirstEnergy reflect avoided losses in the TRC test related to avoided energy costs?
- (c) Explain in detail how avoided losses are reflected in determining avoided costs (both capacity and energy).
- (d) Explain in detail the basis for FirstEnergy's approach to avoided losses.
- (e) Identify FirstEnergy's percentage losses for each rate schedule/class of customer.
- (f) Identify and provide all related documents.

Response: Objection as to the use of the term "avoided losses", which is vague and not commonly used in the industry. If the term means "line losses", then the following answers are provided:

- (a) FirstEnergy reflects line losses in the TRC test related to avoided capacity costs.
- (b) FirstEnergy reflects line losses in the TRC test related to avoided energy costs?
- (c) Line losses are reflected in determining avoided costs (both capacity and energy) by grossing up the kW and kWh savings values from the customer level to the generation level using a FirstEnergy Loss study.
- (d) See answer (c)
- (e) Line Loss Factor is 6.28% for both Residential and Commercial.
- (f) See attached file named Line Loss Factors.xls

Case No. 09-1947-EL-POR, Case No. 09-1948-EL-POR, Case No. 09-1949-EL-POR, et al

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2010 through 2012 and Associated Cost Recovery Mechanisms

RESPONSES TO DATA REQUESTS

Nucor Set 1 Regarding reflection of avoided reserve margins in the TRC test:
DR-6

- (a) Does FirstEnergy reflect avoided reserve margins in the TRC test for capacity?
- (b) Explain in detail how avoided reserve margins are reflected in determining avoided capacity costs.
- (c) Explain in detail the basis for FirstEnergy's approach to avoided reserve margins (include why or why not such avoided reserve margins are reflected in the TRC test for avoided capacity).
- (d) Identify the specific percentage reserve margin required and the source/basis for such requirement.
- (e) Identify and provide all related documents.

Response:

- (a) FirstEnergy does not reflect avoided reserve margins in the TRC test for capacity
- (b) See answer to (a)
- (c) Reserve Margin is not included in the avoid capacity costs, they are based on MISO and PJM capacity market prices and estimates referred to in Nucor Set 1 DR-4.
- (d) None.
- (e) None

Case No. 09-1947-EL-POR, Case No. 09-1948-EL-POR, Case No. 09-1949-EL-POR, et al

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2010 through 2012 and Associated Cost Recovery Mechanisms

RESPONSES TO DATA REQUESTS

Nucor Set 1 Referring to the avoided cost of generating capacity:
DR-7

- (a) Identify and provide FirstEnergy's estimate of the installed cost of a new combustion turbine with an in-service date of each of the following years: 2010, 2011, 2012 and 2013.
- (b) Identify and provide any other cost estimates for construction and/or installation of new combustion turbines available to FirstEnergy.
- (c) Identify and provide Black & Veatch's estimate of the cost of a new combustion turbine with an in-service date of each of the following years: 2010, 2011, 2012 and 2013.
- (d) Identify and provide any other cost estimates for construction and/or installation of new combustion turbines prepared by or available to Black & Veatch.
- (e) Identify and provide a detailed breakdown of the cost estimate used to generate the estimates in (a) and (c) above.
- (f) Identify and provide an estimate of the fixed O&M costs associated with a new combustion turbine.

Response: (a) - (f) – Objection. The Companies are distribution companies that own no generation and therefore the inquiries regarding the projected costs of generating plants is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence. Without waiving the objection, the cost of a new combustion turbine was not factored into the analyses performed while preparing the 3 year Plans.

Case No. 09-1947-EL-POR, Case No. 09-1948-EL-POR, Case No. 09-1949-EL-POR, et al

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2010 through 2012 and Associated Cost Recovery Mechanisms

RESPONSES TO DATA REQUESTS

Nucor Set 1 Refer to the statement at Appendix D to the Energy Efficiency and Peak Demand
DR-8 Reduction Plan and Initial Benchmark Report at page 143, that “[f]or capacity, the team has used a combination of market prices for MISO in the early years, and Western PJM prices for years 2011 and beyond.”

- (a) Identify the prices used for each year.
- (b) How were the market prices for MISO determined?
- (c) How were the Western PJM prices for years 2011 and beyond determined?
- (d) Please identify and provide all sources, studies, analyses and other documents used to determine the MISO and Western PJM prices.
- (e) Explain in detail the reasons for using market prices rather than the costs of the construction of new generating capacity.
- (f) Identify and provide all supporting authority or information for using market prices of capacity in lieu of the cost of new generating capacity.
- (g) Identify all regulatory proceedings that FirstEnergy and/or Black & Veatch are aware of where market prices of capacity were used for calculating avoided capacity costs for purposes of applying a TRC test.
- (h) Identify and provide a copy of all documents from regulatory

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proceedings identified in (g) above that discuss the approach to calculating avoided capacity costs.

- (i) Identify all regulatory proceedings that FirstEnergy or Black and Veatch are aware of where the cost of constructing new generating capacity was used for calculating avoided capacity costs for purposes of applying a TRC test.
- (j) Identify and provide a copy of all documents from regulatory proceedings identified in (i) above that discuss the approach to calculating avoided capacity costs.

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- Response:**
- (a) See answer to Nucor Set 1 DR-4 (a)
 - (b) See answer to Nucor Set 1 DR-4 (b)
 - (c) See answer to Nucor Set 1 DR-4 (b)
 - (d) See answer to Nucor Set 1 DR-4 (c)
 - (e) The reasons for using market prices rather than the costs of the construction of new generating capacity is that the Companies do not own any generating capacity. They buy all needed capacity and energy from the market.
 - (f) No Documents are available.
 - (g) Objection – legal work product.
 - (h) Objection – legal work product.
 - (i) Objection – legal work product.
 - (j) Objection – legal work product.

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Nucor Set 1 Refer to the statement at Appendix D to the Energy Efficiency and Peak Demand
DR-9 Reduction Plan and Initial Benchmark Report at page 143, that “[f]or transmission
and distribution, the team is including marginal T&D costs by creating a T&D
number the Companies based on a PJM cost of transmission capacity used in the
Pennsylvania ACT 129 filing of approximately \$15 per kW-year and \$5 per kW-
year distribution avoid cost.”

- (a) Explain in detail and identify and provide a workpaper and/or spreadsheet showing how the marginal transmission capacity cost was developed.
- (b) Explain in detail and identify and provide a workpaper and/or spreadsheet showing how the marginal distribution capacity cost was developed.
- (c) What is the source of the \$5 per kW-year distribution avoided cost?
- (d) Please provide a copy of the Pennsylvania ACT 129 filing.
- (e) Were marginal avoided transmission or distribution costs used in calculating the TRC for FirstEnergy’s interruptible load?
- (f) Explain the answer to (e) in detail.

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- Response:**
- (a) No FirstEnergy specific Marginal T&D Study was performed. The Marginal T&D Cost estimates of 5\$/kW are 15\$/kW are B&V estimates of Marginal T&D costs for FirstEnergy based on its experience performing Marginal Cost of service studies and Avoided Cost of service studies. The result of these studies were evaluated but not taken directly due to the differences in locality and system density. These amounts were based on these studies and B&V's expertise in the industry. There are no formal studies that exist to support these amounts.
 - (b) None, see answer to (a)
 - (c) See answer to (a)
 - (d) Link to PA PUC website, Act 129 information
http://www.puc.state.pa.us/electric/Act_129_info.aspx
 - (e) No marginal avoided transmission or distribution costs were used in calculating the TRC for FirstEnergy's interruptible load?
 - (f) Avoided costs for interruptible load was based on current tariff pricing.

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Nucor Set 1 Regarding avoided energy costs assumed in the TRC test:
DR-10

- (a) Provide the estimated avoided energy costs for each year used in the study.
- (b) Explain in detail how such costs were obtained and calculated.
- (c) Does the estimate of avoided energy costs reflect time of use? Explain the answer in detail including why or why not.
- (d) Provide all calculations, studies, or analyses used in the derivation of these costs.

Response:

- (a) See answer to Nucor Set 1 DR-4 (a)
- (b) See answer to Nucor Set 1 DR-4 (b)
- (c) Energy Costs do not reflect time of use. The modeling for energy savings is not done on an hourly basis, which would be required to account for time of use pricing.
- (d) See answer to Nucor Set 1 DR-4 (c)

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Nucor Set 1 Referring to the proposed interruptible request for proposal (“RFP”) program:
DR-12

- (a) Given that the amount of payments in response to an interruptible RFP that has not yet been conducted cannot be known at this time, explain in detail how FirstEnergy can conduct a TRC test on such a program.
- (b) Given that the amount of payments in response to an interruptible RFP that has not yet been conducted cannot be known at this time, explain in detail if and how a TRC is meaningful for such a program.
- (c) Identify and provide all analyses conducted by FirstEnergy and/or Black & Veatch to determine the payments, amount of load and so forth necessary to conduct the TRC on the interruptible RFP program (including all related documents).
- (d) Provide the estimated payments and load used in applying the TRC test to the RFP.
- (e) Explain in detail how the TRC test was applied to the RFP program.

Response:

- (a) The TRC test for 2011 and 2012 assumed the same pricing and loads as 2010 (Riders ELR and EDR) and did not attempt to estimate the results of the RFP. The RFP process will be determined in PUCO Case 09-906-EL-SSO.
- (b) See response to (a)
- (c) See response to (a)
- (d) See response to (a)
- (e) The TRC test was not applied to the RFP program. See also the response to (a).

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**Nucor Set 1
DR-13** Does the TRC test for the C/I Interruptible Load Program consider any peak demand reduction or energy savings benefits from FirstEnergy's ability to call Economic Buy Through Option Events under Rider ELR? If not, explain in detail why not.

Response: The peak demand reduction benefits are included in the TRC test. There are no avoided energy costs considered in the TRC test, because the Plan assumes that the energy usage is delayed not forgone and does not distinguish between different hourly energy prices.

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Nucor Set 1 Regarding Table 7E of the Ohio Edison Portfolio and Benchmark Report:
DR-14

- (a) Does the Interruptible Demand Reduction analysis for 2010 assume Rider ELR being in place for the full year?
- (b) Does the Interruptible Demand Reduction analysis for 2011 assume Rider ELR being in place for January 2011 through May 2011, and the interruptible RFP process being in place from June 2011 through December 2011?
- (c) Does the Interruptible Demand Reduction analysis for 2012 assume the RFP process being in place for the full year?
- (d) What levels of participation on Rider ELR, Rider OLR, and the RFP were assumed for purposes of this analysis? Provide all studies and analyses relied upon to determine the level of participation.
- (e) What “measure life” was assumed in the TRC analysis for Interruptible Demand Reduction?
- (f) Footnote 2 in Table 7E appears to have been cut off. Please provide the full footnote.
- (g) Are avoided energy costs associated with Economic Buy Through Option Events under Rider ELR taken into account in the TRC analysis for Interruptible Demand Reduction as reflected in Table 7E? If not, why not?

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- (h) Explain in detail why Table 7E shows zero Annual Load Reductions in kW for Interruptible Demand Reduction for the years 2010 through 2012.
- (i) Identify and provide complete details (including a workpaper) for the calculation of the TRC results for each year for this program.
- (j) For the TRC analysis for the interruptible load program for each year 2010-2012:
 - i. Identify and provide the avoided capacity cost per kW used.
 - ii. Breakdown the avoided capacity cost per kW into avoided capacity, avoided reserves and avoided losses.
 - iii. Identify and explain in detail all other costs/kW included in the analysis.

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- Response:**
- (a) Yes, the Plan assumes a payment for the Interruptible Demand in 2010 equal to the full year of the Rider ELR.
 - (b) Yes.
 - (c) Yes.
 - (d) See OE EE&PDR Program Plan Section 3.1.3 3 Interruptible Rate Tariff for C/I Customers. The 31 Ohio Edison customers used in the analysis were taking service under Rider ELR and not shopping with an alternative supplier as of October 2009. There are no OLR customers assumed in the plan. For the RFP participation assumptions, see the response to NUCOR Set 1 DR-12(a). The analysis was done on a customer specific basis, which is treated as confidential by the Companies.
 - (e) No life was assumed. This is an action over one year; therefore the embedded life in the calculation is one.
 - (f) Note 2: "2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component therefore the total avoided energy costs for on and off peak energy costs are displayed here."
 - (g) No. See response to Nucor Set 1 DR-13.
 - (h) Table 7E shows zero Annual Load Reductions in kW for Interruptible Demand Reduction for the years 2010 through 2012, because this column displays additional incremental amounts of savings by year. The Plan only assumes an amount interruptible load achieved in 2009. No, additional interruptible loads are identified in the plan for years 2010-2012.
 - (i) See attached file: Inter Budget-OH.xls
 - (j) See attached file: Inter Budget-OH.xls

The Companies have an interruptible rider for customers who were interruptible as of Feb 2008. Currently there are 44 customers that are interruptible. The customers get two credits, Rider ELR @ \$1.95 /kw/month and Rider @ \$8.05 / kW/month. The interruptible credits are based on their highest weekday load from the hours of noon to 6 pm. For more details about the riders, see the tariffs on the Companies' website. We analyzed the interruptible loads during the weekdays hours from 3 pm to 6 pm for the months of June through August 2009. Each customer's interruptible load was determined by subtracting the customer's contracted firm load from customer's hourly measure load in kW. If the resultant was less than zero, that interruptible load was counted as zero for that hour. Each customer's interruptible load was averaged over the 3-6 pm hours. The sum of the customers' average interruptible load by company is as follows:
OE: 31.7 MW

Rate per
Kw/Year
120

Hours Assumed per Year

	Average MWs (3-6pm)	2010	2011	2012
OE:	31.7	0.0	0.0	0.0
Price Assumed	120	120	120	120

Hours Assumed per Year with Losses

	Average MWs (3-6pm)	2010	2011	2012
OE:	32.7	0.0	0.0	0.0
Cost per MW		38,447	120,000	120,000
Marketing, M&V, Admin		72,542	114,259	101,115
Incentives				
OE		1,218,778	3,918,014	3,918,014
		9,289,078	18,786,693	19,610,671
Budgets				
OE		1,291,320	4,032,273	4,019,129
Avoided Capacity		46.92	53.00	94.85

Hours Assumed per Year with Losses

	Average MWs (3-6pm)	2010	2011	2012
OE:		32.7	32.7	32.7
		1,531,903	1,730,524	3,096,800
TRC Test		1.19	0.43	0.77

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Nucor Set 1 DR-15 Referring to Appendix B-1 through B-3 of the Ohio Edison Portfolio and
Benchmark Report:

- (a) Explain in detail the basis for the values in the “Incentive Rebate for Equip” column for Interruptible Demand Reduction for each of the three budget years.
- (b) Provide the details of the calculation of the values (including a detailed workpaper) in the “Incentive Rebate for Equip” column for Interruptible Demand Reduction for each of the three budget years.

Response:

- (a) The “Incentive Rebate for Equip” column for Interruptible Demand Reduction for each of the three budget years is based on current tariff pricing converted to kW-Year.
- (b) Refer to FirstEnergy tariff Rider EDR (Economic Development Rider) Sheet 116 and Rider ELR (Economic Load Response Program Sheet 101.

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Nucor Set 1 Referring to paragraphs 12 and 34 of the Application:
DR-16

- (a) Is FirstEnergy seeking approval in this proceeding to continue Riders ELR and OLR for the life of the current ESP plan, even though those riders already are approved for the life of the current ESP plan pursuant to the Stipulation approved by the Commission in Case No. 08-935-EL-SSO?
- (b) If the answer to (a) is yes, please explain why in detail.
- (c) Is FirstEnergy seeking approval in this proceeding for a Company RFP to procure interruptible load beginning in 2011, even though this RFP is already being litigated in the Company's MRO proceeding?
- (d) If the answer to (c) is yes, please explain why in detail.

Response:

- (a) No. The Companies are only seeking approval in this proceeding to include the *results* of the ELR/OLR program for purposes of compliance with R.C. 4928.66(A) benchmarks.
- (b) N/A. See response in (a) above.
- (c) No. The Companies are only seeking approval in this proceeding to include the *results* of the Interruptible RFP program (however it is ultimately approved in the MRO proceeding) for purposes of compliance with R.C. 4928.66(A) benchmarks.
- (d) N/A. See response to (c) above.

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Nucor Set 1 Refer to pages 9-10 of Mr. Ouellette's testimony.
DR-17

- (a) Identify and explain in detail any statutory authority for FirstEnergy's proposal to recover "shared savings."
- (b) Identify and explain in detail any regulatory authority for FirstEnergy's proposal to recover "shared savings."
- (c) Explain in detail the basis for FirstEnergy's proposal to receive 15% of the net benefits.
- (d) Explain in detail how a 15% share (for shared savings) was determined.
- (e) Identify and provide all calculations and other evidence or documentation supporting the choice of a 15% shared savings.
- (f) Is the purpose of the shared savings proposal to incentivize the Companies to achieve more energy efficiency and peak demand reductions in a given year than what is required by statute?
- (g) Explain in detail why achieving greater reductions than the statutory benchmarks is appropriate and should be incentivized.
- (h) If the answer to (f) is yes, explain in detail why an incentive is necessary.
- (i) Explain in detail whether FirstEnergy would seek to achieve reductions over the statutory benchmarks even if no shared savings proposal were in place.
- (j) If the answer to (f) is yes, would a percentage of shared savings less than 15% also provide such an incentive?

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- (k) If the answer to (f) is yes, what would be the minimum incentive (percentage and dollar amount) necessary to motivate FirstEnergy?
- (l) Has FirstEnergy done any estimates of how the 15% shared savings proposal will affect costs of the energy efficiency and peak demand reduction portfolio to retail customers? If the answer is yes, provide all such estimates.

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Response:

- (a) Objection. Attorney work product.
- (b) see (a)
- (c) FirstEnergy's proposal of 15% is comparable to the requests of other utilities in Ohio. AEP has proposed this in their portfolio plan. Duke has been approved with a rate of return cap that is 15%.
- (d) See (c)
- (e) See testimony of Jon F. Williams and David M. Roush in Case No. 09-1089-EL-POR. Also see testimony of Theodore E. Schultz in Case No. 08-920-EL-SSO.
- (f) The purpose of the shared savings is to give the Companies incentive to exceed benchmarks and to control program costs. See EPA's "Aligning Utility Incentives with Investment in Energy Efficiency" at <http://www.epa.gov/RDEE/documents/incentives.pdf> for a discussion of shared savings and its role in sustainable energy efficiency programs.
- (g) To the extent there are cost effective measures available beyond what the utility is required to meet using statutory benchmarks, the customers benefit through the postponement of constructing new generation. Further, for those utilities without generation, there is less demand in the market, which generally reduces wholesale prices. Without a financial incentive, there would be no reason for the Companies to exceed that which is required by law.
- (h) The utility does not currently have an incentive to go beyond the legal requirements of SB 221 because it does not earn a rate of return on energy efficiency.
- (i) No, it would not. See (h)
- (j) It might. However, the Companies have not made such calculations, instead choosing to use the same savings percentage as used by other Ohio utilities.
- (k) Objection. Attorney work product.
- (l) No

EXHIBIT GOINS-2

EXCERPTS FROM DIRECT TESTIMONY, CASE NO. 09-906-EL-SSO

**STATE OF OHIO
BEFORE THE
PUBLIC UTILITIES COMMISSION**

CASE NO. 09-906-EL-SSO

**IN THE MATTER OF THE APPLICATION OF
OHIO EDISON COMPANY, THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, AND THE TOLEDO EDISON
COMPANY FOR APPROVAL OF A MARKET RATE OFFER TO
CONDUCT A COMPETITIVE BIDDING PROCESS FOR
STANDARD SERVICE OFFER ELECTRIC GENERATION
SUPPLY, ACCOUNTING MODIFICATIONS ASSOCIATED WITH
RECONCILIATION MECHANISM, AND TARIFFS FOR
GENERATION SERVICE**

**DIRECT TESTIMONY OF
DR. DENNIS W. GOINS
ON BEHALF OF NUCOR STEEL MARION, INC.**

December 4, 2009

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- 1 ■ Focuses only on 2012. The Commission's rule requires that a rate
2 impact analysis address impacts "for the duration of the MRO plan."
3 FirstEnergy explains that it omits a post-2012 rate comparison
4 because there are no known pricing updates to incorporate
5 subsequent to May 31, 2012.
- 6 ■ Assumes that Rider PDR credits will exactly equal the estimated
7 total costs FirstEnergy incurs serving customers under Rider ELR
8 for the twelve months ending May 31, 2011. There appears to be no
9 reasonable basis for this assumption.

10 **Q. SHOULD FIRSTENERGY BE REQUIRED TO CORRECT THESE**
11 **FLAWS IN AN UPDATED RATE IMPACT ANALYSIS?**

12 **A.** Yes.

13 **INTERRUPTIBLE RATES**

14 **Q. WHAT IS INTERRUPTIBLE SERVICE?**

15 **A.** Interruptible or curtailable service is a separately identifiable nonfirm utility
16 product that allows a supplier to interrupt or curtail customer loads when
17 reliability is impaired. Interruptible load enables a supplier to maximize the
18 value of existing capacity resources and to avoid acquiring new capacity
19 resources.

20 On a daily basis, utilities serve interruptible loads using available
21 generating resources that are not required to serve firm load. That is, the
22 available supply of interruptible service depends on the relationship
23 between available power supply resources and firm service demands at a
24 point in time. If firm demands command all available power supply
25 resources in a particular hour, the supply of interruptible service falls to
26 zero—that is, interruptible loads are interrupted. When firm demands are
27 less than available resources, interruptible service is available.

1 **Q. ARE INTERRUPTIBLE SERVICE AND RATE OPTIONS COMMON**
2 **IN THE ELECTRIC UTILITY INDUSTRY?**

3 **A.**Yes. Interruptible service is and has been a common service offered by
4 most electric utilities. Federal legislation passed in 1978 (PURPA)
5 recognized the value of interruptible rates and required state regulatory
6 commissions to consider adopting them. Current federal policy continues to
7 support such rates and other demand response mechanisms. FirstEnergy has
8 had successful interruptible rates for many years. A 2006 report by the
9 Brattle Group on behalf of the Edison Electric Institute described
10 interruptible service as follows:

11 Utilities traditionally have offered large commercial and industrial
12 customers such credits through interruptible service tariffs. Under
13 such tariffs, customers typically receive a credit in return for agreeing
14 to curtail all or a significant portion of their load up to several times a
15 year, at times when the utility has a system operating emergency or
16 when incremental generating costs are very high. Although
17 enrollment in these programs usually is voluntary, the participant can
18 face significant financial penalties if it fails to reduce demand when
19 directed to do so, such as paying the spot market price for electricity
20 consumed during a requested interruption period. Curtailable demand
21 provides the utility or system operator with another resource to
22 maintain system stability when resources are tight and also can reduce
23 a utility's installed capacity obligations.⁴

24 **Q. DO INTERRUPTIBLE LOADS PROVIDE TANGIBLE CAPACITY,**
25 **OPERATING, AND ECONOMIC BENEFITS?**

26 **A.**Yes. Interruptible load can and should be a significant element of any
27 electric utility's demand-response efforts. Interruptible load has long been
28 recognized as a means to avoid the cost of adding generating and
29 transmission capacity. It provides reliability benefits by substituting for

⁴ Frank Graves, et. al., *PURPA: Making the Sequel Better than the Original* (EEL, December 2006) at 35. The Brattle Group served as a consultant to FirstEnergy in its 2008 ESP case.

1 such ancillary services as spinning and operating reserves. Interruptible
2 load expands the range of resources available to meet contingencies, lowers
3 customer costs, and can even be used to mitigate wholesale price volatility
4 and curb potential market power problems. Interruptible service is also a
5 form of insurance or safety net, protecting against emergency situations if
6 and when they occur. In addition, interruptible load can create
7 environmental benefits by avoiding the impacts of constructing and
8 operating fossil generation.

9 As I noted, interruptible load can be used in wholesale markets to reduce
10 prices and price volatility. For example, market-clearing prices fell by
11 \$100-\$200/MWh on a peak day in August 2006 in the Midwest ISO when
12 interruptible load was used in response to a call for demand reductions.⁵
13 Similarly, Ohio Edison's current Rider ELR—in which Nucor
14 participates—calls for economic interruptions when an Economic Buy
15 Through Option Event occurs—that is, when the MISO LMP exceeds 1.5
16 times the CBP wholesale price. These economic curtailments reduce the
17 need to purchase power at elevated prices, thereby reducing supply costs for
18 the utility and its customers. Interruptible customers typically are allowed
19 to buy through economic interruptions—but only at market-based prices,
20 transferring the risk of high prices from all consumers to the interruptible
21 customer. By reducing demand during high-cost periods, economic
22 curtailments mitigate conditions that produce price spikes.

23 Interruptible load also helps states to promote economic development
24 and manufacturing jobs retention. The availability of an effective
25 interruptible service option is often a key factor in determining where a
26 manufacturing facility is located, particularly if the manufacturing process
27 is energy intensive. In addition, the continuing long-term availability of a

⁵ Federal Energy Regulatory Commission Staff Report, *2007 Assessment of Demand Response and Advanced Metering* at 6-7 (September 2007).

1 cost-effective interruptible rate option can help keep established firms
2 competitive and growing.

3 **Q. WHY DOES NUCOR TAKE INTERRUPTIBLE SERVICE FROM**
4 **OHIO EDISON?**

5 **A.** In today's difficult economic climate, Nucor must cut costs wherever
6 possible to maintain its competitive position in the global steel market.
7 Global competition requires Nucor to control input costs. Nucor uses state-
8 of-the-art arc furnace technology to recycle scrap steel used in producing
9 new steel products. This process uses enormous amounts of electricity.
10 Any savings in electricity costs make Nucor more competitive in the global
11 steel market—a result good not only for Nucor, but also for its Ohio
12 employees. Any increase in electricity costs—especially ^{an} unjustified
13 increase—will impair Nucor's ability to compete. While Rider ELR is not a
14 perfect interruptible rate option, it does enable Nucor to reduce energy costs
15 and produce more competitive steel products.

16 **Q. IS INTERRUPTIBLE SERVICE RELATED TO THE POLICY**
17 **OBJECTIVES AND REQUIREMENTS OF SENATE BILL 221?**

18 **A.** Yes. While interruptible rates have historically provided many other
19 benefits, effective interruptible rates are also critical tools that utilities can
20 use to meet the broad demand response policy objectives outlined in Senate
21 Bill 221 (SB 221), as well as the specific peak demand reduction targets
22 under Section 4928.66(A)(1)(b) of the Revised Code. The latter legislation
23 requires electric distribution utilities to implement peak demand reduction
24 programs that will reduce peak demand by 1 percent reduction in 2009 and
25 by an additional 0.75 percent annually through 2018. Section 4928.66(d) of
26 the Revised Code explicitly includes demand-response programs in options
27 available to reduce peak demand. Moreover, the Commission recently
28 affirmed arguments by both FirstEnergy and Nucor that interruptible load

1 (including load served on Riders ELR and OLR) should count toward
2 meeting SB 221's peak demand reduction benchmarks.⁶ FirstEnergy's
3 MRO proposal for a demand response RFP⁷ recognizes the potential for
4 demand response programs to help meet statutory peak demand reductions,
5 although the RFP approach will likely be less effective than the current
6 Rider ELR in meeting this objective.

7 **Q. SHOULD FIRSTENERGY PROMOTE THE DEVELOPMENT OF**
8 **INTERRUPTIBLE LOAD?**

9 **A.** Yes. FirstEnergy should promote retention and expansion of interruptible
10 load on its system through reasonable, cost-based interruptible rate options.

11 **Q. HAS THE COMMISSION RECOGNIZED THE NEED FOR**
12 **PROPERLY DEVELOPED INTERRUPTIBLE RATES IN AN MRO**
13 **FOR FIRSTENERGY?**

14 **A.** Yes. In its previous MRO filing (Docket No. 08-936-EL-SSO), FirstEnergy
15 did not include interruptible and time of use rates, arguing that they were
16 unnecessary. The Commission rejected this position and stated:

17 The Commission notes that the policy of the state, as codified in
18 Section 4928.02, Revised Code, requires the Commission to ensure
19 the availability of unbundled and comparable retail electric service
20 that provides customers with the supplier, term, price, conditions, and
21 quality options they elect to meet their respective needs. Further, SB
22 221 amended Section 4928.02, Revised Code, to specifically include
23 the promotion of time differentiated pricing as a policy goal of this
24 state. FirstEnergy has not demonstrated how its proposed rate design
25 advances these policy goals. In fact, the record clearly indicates that
26 FirstEnergy could have proposed a rate design which would advance
27 these goals. The Commission agrees with Kroger that time-of-day
28 rates would recognize that some customers have a higher proportion
29 of usage in lower-cost, off-peak periods (Kroger Ex. 1 at 5).
30 Likewise, the record demonstrates that interruptible rates can be used
31 to reduce generation and transmission capacity needs (Nucor Ex. 1 at

⁶ Case No. 08-888-EL-ORD, Entry on Rehearing at 4 (October 15, 2009).

⁷ Application at 24-25; Direct Testimony of John E. Paganie (Paganie Direct), Attachment JEP-1 at 1-2.

1 11). Moreover, the Commission notes that FirstEnergy has not
2 demonstrated that time-of-day rates or interruptible rates are
3 impractical or cannot be implemented as part of a competitive bidding
4 process (Tr. I at 159; Tr. V at 21). In fact, the record in this
5 proceeding demonstrates that FirstEnergy included both time-of-day
6 rates and interruptible rates in its prior request, in Case No. 07-796-
7 EL-ATA, for a competitive bidding process (Nucor Ex. 1 at 5, 10).
8 Therefore, because the Commission finds that FirstEnergy has not
9 demonstrated that its proposed rate design advances the state policies
10 enumerated in Section 4928.02, Revised Code, the proposed rate
11 design should not be adopted and approved by the Commission.⁸

12 **Q. HOW SHOULD INTERRUPTIBLE SERVICE BE PRICED?**

13 **A.** Interruptible service should be priced to reflect the supplier's reduced cost
14 of providing interruptible service—often though firm service credits or
15 discounts that reflect avoided cost savings and reduced costs of service. ~~For~~
16 ~~example, the EEI report I noted earlier states:~~

17 ~~At a high level, one first needs to determine the types of costs that a~~
18 ~~utility could avoid as a result of customer demand reductions. Peak~~
19 ~~load reductions enable a utility to avoid serving a portion of its load at~~
20 ~~times when marginal energy prices are high, so they clearly enable the~~
21 ~~utility to avoid energy costs (i.e., fuel and other variable production~~
22 ~~costs). Moreover, peak load reductions that a utility can count on in a~~
23 ~~planning sense could enable a utility to avoid building or purchasing~~
24 ~~peak generating capacity, which suggests that the credits could reflect~~
25 ~~the capacity cost of peaking units, such as combustion turbines.~~
26 ~~Interruptible customers do not enable a utility to avoid the sunk costs~~
27 ~~of any existing peaking units; they only potentially enable a utility to~~
28 ~~avoid capacity costs associated with prospective peaking units. Since~~
29 ~~avoidable costs are, by definition, costs that have yet to be incurred,~~
30 ~~credits should be based on prospective capacity costs that the utility~~
31 ~~would incur "but for" the load reduction provided for by the customer~~
32 ~~with curtailable load.⁹~~

⁸ Case No. 08-936-EL-SSO, Opinion and Order, at 24 (November 25, 2008).

⁹ Graves, *op cit.* at 35. (references omitted).

1 Q. SHOULD AN INTERRUPTIBLE RATE RECOVER ANY FIXED
2 PRODUCTION AND TRANSMISSION COSTS?

3 A. No. From a pricing standpoint, interruptible rates—although they provide
4 demand response benefits—should not be viewed as an incentive program
5 similar to typical energy efficiency and demand-side management
6 programs. Instead, interruptible rates should reflect basic cost principles.
7 Fundamental economic theory demonstrates that interruptible customers do
8 not cause the utility to incur production and bulk transmission capacity
9 costs. For example, Professor James C. Bonbright, a recognized pricing
10 authority, advocated pricing interruptible service to reflect no capacity-
11 related cost of service:

12 Interruptible service has been used by both gas and electric companies
13 for peak shaving. The costs cannot be accurately determined because
14 it is a byproduct resulting from generating and bulk transmission
15 facilities built and operated for firm service (see Nissel, 1983). As a
16 result, only the customer cost (e.g., customer-connected spur lines and
17 substations) and energy costs (e.g., fuel and incremental maintenance
18 cost) actually incurred and *no capacity pricing cost should be*
19 *included in pricing interruptible service.*

20 While some feel that it is an impropriety to treat interruptible
21 customers as if they were firm customers, they still opine that it would
22 be fair and reasonable to obtain a small contribution from them for
23 capacity costs. This is debatable.¹⁰

24 Q. PLEASE DESCRIBE FIRSTENERGY'S CURRENT
25 INTERRUPTIBLE RATES.

26 A. FirstEnergy proposed two stand-alone options—Riders ELR and OLR—in
27 Case No. 08-935-EL-SSO to replace the various interruptible rates offered
28 by its operating companies. Riders ELR and OLR were adopted with
29 modifications in the final Stipulation in that case.

¹⁰ James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, *Principles of Public Utility Rates*, Arlington, Virginia: Public Utilities Reports, Inc., 1988, at 502 (emphasis added).

1 Rider ELR requires participating customers to curtail load above an
2 agreed firm minimum load on 10-minute notice during an Emergency
3 Curtailment event that endangers service reliability to firm customers.
4 Rider ELR also includes an Economic Buy-Through component that is
5 triggered by high market prices generally during peak demand periods.
6 Rider ELR customers are notified of the economic event and given the
7 option either to interrupt load, or not to interrupt and pay market prices for
8 nonfirm load that remains on line during the called economic interruption.
9 In addition, customers with interruptible service prior to February 1, 2008
10 that continue to take service under certain rate schedules or in conjunction
11 with Rider ELR are entitled to an interruptible credit under Rider EDR.

12 Rider OLR is similar to Rider ELR—both require customers to interrupt
13 or curtail load during a system emergency when system reliability to firm
14 customers is impaired. However, Rider OLR allows no economic
15 interruptions and excludes the additional EDR credit in Rider ELR. Both
16 the ELR and OLR riders have fixed rate credits applicable to a customer's
17 interruptible load. (Copies of Riders ELR, OLR, and EDR are included as
18 Exhibit DWG-2.)

19 **Q. DOES FIRSTENERGY PROPOSE RETAINING RIDERS ELR AND**
20 **OLR IN THIS CASE?**

21 **A.** No. Absent action by the Commission, both riders will expire after May 31,
22 2011.

23 **Q. HAS FIRSTENERGY PROPOSED AN INTERRUPTIBLE OPTION**
24 **IN THIS PROCEEDING?**

25 **A.** Yes. However, instead of specific tariffed interruptible rate options similar
26 to Riders ELR and OLR, FirstEnergy has proposed a vague bidding
27 program for interruptible load. Although it has provided few program
28 details, FirstEnergy apparently plans to issue an RFP asking large

1 commercial and industrial customers to submit price bids at which they
2 would be willing to be interrupted "to meet the target load-reduction
3 requirements under R.C. Section 4928.66 or for system emergencies."¹¹
4 This ill-defined bidding program may effectively amount to no program at
5 all. Moreover, in my opinion, this program does not satisfy the requirement
6 for a reasonable interruptible rate established by the Commission in
7 FirstEnergy's last MRO filing.

8 **Q. HOW WILL THIS NEW RFP INTERRUPTIBLE PROGRAM**
9 **WORK?**

10 **A.** While many program details are unclear or do not exist, I will summarize
11 my understanding of FirstEnergy's RFP scheme. FirstEnergy will issue an
12 RFP in the first quarter of each year beginning in 2011, seeking bids from
13 large commercial and industrial customers that are willing to curtail during
14 the upcoming summer at a certain price. The lowest priced bids will be
15 allowed to participate in the program on an as-bid basis. To secure
16 participation, FirstEnergy proposes to request more MWs in the RFP than it
17 actually needs. Customers will be interrupted as needed, up to the capacity
18 bid into the program. Program costs will be collected from customers
19 through Rider PDR.¹²

20 **Q. DID FIRSTENERGY EXPLAIN WHY IT HAS CHOSEN THIS RFP**
21 **APPROACH INSTEAD OF RETAINING RIDERS ELR AND OLR?**

22 **A.** No. FirstEnergy's direct testimony offers no explanation for abandoning
23 Riders ELR and OLR beyond noting that the two riders "expire under their
24 own terms on May 31, 2011."¹³ FirstEnergy also offers no analysis
25 demonstrating that the proposed RFP approach is superior to the existing

¹¹ Application at 24.

¹² See Paganie Direct, Attachment JEP-1 for a description of FirstEnergy's RFP proposal.

¹³ Paganie Direct at 7.

1 interruptible Rider ELR and/or Rider OLR. In response to discovery,
2 FirstEnergy stated:

3 Other than the RFP approach, FirstEnergy considered the option of
4 having a new retail tariff for interruptible load somewhat similar to
5 current Rider OLR. Current Riders ELR and OLR expire on May 31,
6 2011. No documents exist, other than what have been filed in this
7 case.¹⁴

8 Instead of responding to the need for a reasonably permanent
9 interruptible rate option, FirstEnergy's focuses exclusively on meeting its
10 minimum statutory peak reduction goals. According to FirstEnergy: "This
11 [RFP] program is designed to achieve peak demand reductions and its
12 objective is realized by the awarding of bids."¹⁵ In short, FirstEnergy hopes
13 to "stimulat[e] sufficient peak demand reduction to meet the statutory
14 requirements at a reasonable price."¹⁶ One problem with this narrow focus
15 is that FirstEnergy provides no evidence that the new RFP program would
16 achieve even these minimum goals.

17 **Q. DOES FIRSTENERGY'S RFP PROPOSAL PROMOTE THE**
18 **RETENTION AND FURTHER DEVELOPMENT OF**
19 **INTERRUPTIBLE LOAD?**

20 **A.** No. FirstEnergy's RFP proposal does not support retaining existing
21 interruptible load—much less identifying and encouraging new interruptible
22 load. FirstEnergy's preliminary, non-binding estimate of interruptible peak
23 demand reductions to meet statutory peak demand reduction targets includes
24 little interruptible load—far below amounts existing prior to SB 221 or
25 currently served under Riders ELR and OLR.¹⁷ For example, FirstEnergy
26 predicts a system-wide decline of interruptible load to 34 MW by 2018 and
27 no interruptible load afterward to meet statutory demand reduction

¹⁴ FirstEnergy Response to Nucor Request 1-32.

¹⁵ Paganie Direct, Attachment JEP-1 at 2.

¹⁶ *Id.* at 7.

¹⁷ FirstEnergy Response to Nucor Request 1-11.

1 requirements.¹⁸ FirstEnergy is effectively predicting the demise of its entire
2 interruptible program.

3 Eliminating current interruptible rates—which only took effect in June
4 2009—will not help FirstEnergy retain existing interruptible load.
5 Moreover, FirstEnergy has conducted no study or analysis to identify
6 potential interruptible load not currently under contract and to determine
7 whether customers will be willing to commit this load under FirstEnergy's
8 RFP approach.¹⁹

9 **Q. SHOULD FIRSTENERGY'S CURRENT INTERRUPTIBLE RIDERS**
10 **BE REPLACED BY ITS RFP DEMAND RESPONSE PROGRAM?**

11 **A.** No. FirstEnergy's current interruptible riders are effective demand response
12 tools that should not be abandoned when demand response is even more
13 important today than it has been historically.

14 Interruptible customers need reasonable rate certainty to make prudent
15 operating and investment decisions. Under FirstEnergy's RFP approach, an
16 industrial customer has no way of even knowing whether it will be chosen
17 in the RFP process. There are no benchmarks or standards suggesting
18 appropriate or reasonable bid offers. In addition, since bidding will be on
19 an annual basis, a bid miscalculation can force a customer out of the
20 demand response program for a full year, leaving the customer to face
21 unmitigated rate increases. The lack of certainty regarding program
22 participation imposes huge planning and operating risks on potential
23 interruptible customers. This uncertainty will significantly diminish—if not
24 eliminate—the manufacturing retention and economic development benefits
25 associated with traditional interruptible rates similar to Rider ELR.

¹⁸ *Id.*

¹⁹ FirstEnergy Response to Nucor Request 1-7.

1 **Q. SHOULD WE EXPECT COMPARABLE LEVELS OF**
2 **INTERRUPTIBLE LOAD TO PARTICIPATE IN A COMPETITIVE**
3 **BID PROGRAM COMPARED TO LOAD TAKING SERVICE**
4 **UNDER AN INTERRUPTIBLE RATE WHERE INTERRUPTIBLE**
5 **PRICES ARE SET ADMINISTRATIVELY IN TARIFFS?**

6 **A.** No, especially when the bidding process is ill-defined and uncertain like
7 FirstEnergy's RFP process. Annual competitive bids for capacity resources
8 should generally reflect customer expectations of short-term market
9 conditions. However, prices reflecting short-term market conditions may
10 not always provide sufficient incentive for new, long-lived capacity
11 additions. Similarly, short-term market prices for interruptible load may
12 provide insufficient incentive for customers with large interruptible loads to
13 locate and operate in those markets. In addition, the availability of only
14 short-term market prices may force some customers with large interruptible
15 loads to move or shift operations to markets with more stable, longer-term
16 interruptible rates set in administrative proceedings.²⁰

17 **Q IS MEETING THE STATUTORY PEAK DEMAND REDUCTION**
18 **BENCHMARKS FIRSTENERGY'S SOLE PURPOSE FOR**
19 **PROPOSING THE RFP?**

20 **A.** Apparently yes. FirstEnergy has focused almost exclusively on "seeking
21 approval through this Application of such a Request for Proposal process to
22 assist in securing compliance with the peak demand reduction requirements
23 in R.C. Section 4928.66."²¹ FirstEnergy has made clear that it does "not
24 plan to acquire interruptible load or demand response beyond the amount
25 required to meet statutory peak reduction targets."²²

²⁰ FirstEnergy does not have an estimate of the expected credit/cost of interruptible load under its proposed RFP process. "FirstEnergy has not developed an estimate at this time. Customers will compete against each other to provide this service based upon price, which should lead to a competitive cost." FirstEnergy Response to Nucor Request 1-15(g).

²¹ See Application at 24-25.

²² FirstEnergy Response to Nucor Request 2-2(f).

1 **Q. SHOULD FIRSTENERGY'S INTERRUPTIBLE PROGRAM BE**
2 **DRIVEN ONLY BY THE NEED TO MEET STATUTORY DEMAND**
3 **REDUCTION BENCHMARKS?**

4 **A.** No. This narrow focus ignores the tangible benefits interruptible load
5 provides separate and apart from meeting the benchmarks—benefits that
6 FirstEnergy recognizes. According to FirstEnergy, interruptible load
7 “provides broad energy efficiency and demand-side management benefits,”
8 and “the ability to interrupt service and lower demand at critical times may
9 lead to lower costs for generation service — benefiting all of the Companies’
10 SSO customers, as well as shopping customers who will have a lower price
11 point at which they may shop for competitive electric service.”²³
12 FirstEnergy further explained how having interruptible load available may
13 lead to lower cost for generation service:

14 SSO suppliers will have lower capacity obligations and associated
15 expenses to serve the SSO load because the Companies will reduce
16 the SSO suppliers’ capacity obligations by the MWs provided from
17 the Companies’ peak load reduction programs. In addition, the SSO
18 suppliers’ risk of a high spike in energy prices may be lessened due to
19 interruption of service to customers during times of supply shortages.
20 Lowering an SSO supplier’s risks in this manner may lead to lower
21 bids for generation service.²⁴

22
23 These benefits described by FirstEnergy would be provided by interruptible
24 load even if there were no statutory peak demand reduction benchmarks to
25 be met, which is why an interruptible program narrowly tailored to provide
26 the incremental annual peak demand reduction necessary to meet the
27 benchmarks is the wrong approach. An annual RFP approach ignores the
28 long-term reliability and economic development benefits of interruptible
29 rates. The RFP bidding process does not guarantee that FirstEnergy will
30 have sufficient interruptible capacity to address reliability issues that could
31 be handled under a more traditional interruptible program. The RFP

²³ FirstEnergy Response to NOPEC Request 2-14.

²⁴ FirstEnergy Response to NOPEC Request 2-15.

1 process also does not guarantee that the mix of interruptible participants
2 will provide the most efficient response to reliability issues. Finally,
3 because of uncertainty arising from customers not knowing whether their
4 demand reduction bids will be accepted, an RFP bidding program offers
5 virtually nothing in terms of economic development and manufacturing jobs
6 retention.

7 **Q. DOES THE MRO PROVIDE SUFFICIENT INFORMATION TO**
8 **EVALUATE FIRSTENERGY'S RFP PROPOSAL IN DETAIL?**

9 **A.** No. As I noted earlier, the Application references an "interruptible
10 generation service opportunity," but provides little detail other than to state
11 that there will be an annual RFP seeking the lowest bids "for a price and
12 corresponding interruptible load at which those customers would agree to be
13 interrupted."²⁵ FirstEnergy witness Paganie's testimony offers additional
14 details about the RFP process, but does not provide sufficient information to
15 permit a meaningful analysis. Moreover, although FirstEnergy apparently
16 intends the RFP process to be its sole interruptible program after May 31,
17 2011, it has not even provided the specific terms and conditions that will
18 govern interruptible service. As a result, approving FirstEnergy's proposed
19 RFP process would amount to little more than approving a concept—not a
20 detailed, workable plan.

21 **Q. SHOULD FIRSTENERGY'S RFP APPROACH BE THE**
22 **EXCLUSIVE INTERRUPTIBLE OPTION FOR INTERRUPTIBLE**
23 **CUSTOMERS?**

24 **A.** No. FirstEnergy has not justified moving from its traditional interruptible
25 rates with proven success and benefits to a new, untested bidding approach.
26 FirstEnergy has not implemented a similar RFP approach in its non-Ohio
27 operating companies, and indicates it is not aware of any other utility that

²⁵ Application at 24.

1 has done so.²⁶ Details of the new RFP program are presented in a two-page
2 attachment to witness Paganie's testimony.²⁷ FirstEnergy produced no
3 studies, analyses, or reports used in developing the RFP process or in
4 estimating its potential effectiveness.²⁸ FirstEnergy has no study or analysis
5 determining how much interruptible load it can acquire through this novel
6 process.²⁹ FirstEnergy has proposed a new program that will undermine
7 rate stability for interruptible customers and possibly increase their rates
8 during a time of economic uncertainty. The new program effectively
9 subordinates reliability, economic development, job retention, and rate
10 stability pricing concerns to the single goal of fashioning a demand
11 response program that will help FirstEnergy meet its statutory demand
12 reduction requirements.

13 **Q. WHAT DO YOU RECOMMEND?**

14 **A.** I recommend retaining and extending Rider ELR, which is currently set to
15 expire on May 31, 2011. Extending Rider ELR for an indefinite period
16 would be a reasonable and prudent step to ensure the continued
17 development of FirstEnergy's existing interruptible program. I also
18 recommend retaining and extending Rider OLR—albeit with a credit above
19 its obviously too-low current credit of \$1.95 per kW-month. FirstEnergy
20 indicates that no customer has signed up load under Rider OLR since the
21 ESP rates became effective.³⁰

22 **Q. WHY SHOULD THE COMMISSION REQUIRE FIRSTENERGY TO**
23 **RETAIN RIDER ELR?**

24 **A.** Rider ELR provides the reliability and cost avoidance benefits of traditional
25 interruptible programs, as well as the added feature of economic

²⁶ FirstEnergy Response to Nucor Request 1-13(a-d).

²⁷ FirstEnergy Response to Nucor Request 1-13(e).

²⁸ FirstEnergy Response to Nucor Request 1-13(f, g, and j).

²⁹ FirstEnergy Response to Nucor Request 1-33.

³⁰ Response to Nucor Compromise Request A(3).

1 interruptions with buy-through. Rider ELR will continue to provide a
2 steady supply of interruptible load from year to year, with the reliability,
3 economic development, and manufacturing job retention benefits associated
4 with a traditional interruptible program. Retaining Rider ELR will also give
5 FirstEnergy a relatively stable supply of interruptible load that can be used
6 to meet peak demand reduction benchmarks under SB 221. FirstEnergy
7 should be able to derive most, if not all, of the benefits it expects from its
8 RFP process without creating the uncertainty and unstable prices that make
9 its new proposed interruptible program, even in its outline form,
10 problematic.

11 **Q. SHOULD INTERRUPTIBLE CREDITS IN RIDER ELR BE KEPT**
12 **AT THEIR PRESENT LEVEL?**

13 **A.** Yes. At minimum, I recommend keeping the total Rider ELR credit at \$10
14 per kW.³¹ There is no reason to lower this value since there is no evidence
15 that the value of interruptible load will decrease in 2011 and afterward.

16 **Q. ARE THERE OTHER REASONS FOR KEEPING THE ELR**
17 **CREDIT AT \$10 PER KW OR ABOVE?**

18 **A.** Yes. In determining the capacity value of an interruptible credit, the main
19 consideration is the long-term avoided cost of peaking generation capacity.
20 Several recent analyses and studies put this cost in the range of \$75-\$136
21 per kW-year. For example, a 2006 U.S. Department of Energy report stated
22 that the avoided capacity cost of a peaking unit is approximately \$75 per
23 kW-year, or \$6.25 per kW-month.³² In its RPM construct, PJM uses an

³¹ The total Rider ELR credit currently consists of two elements—a \$1.95 credit in Rider ELR and an additional \$8.05 per kW credit for Rider ELR customers served under the current Rider EDR. The distribution of the two credits between Rider ELR and Rider EDR is a matter of judgment, but moving some or all of the EDR credit to ELR would be reasonable.

³² U.S. Department of Energy, *Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them* at 74 (2006). The DOE report states:

Demand response programs designed to reduce capacity needs are valued according to the marginal cost of capacity. By convention, marginal capacity is

1 administratively-set *cost of new entry* (CONE) value to represent the
2 minimum capacity payment required to induce new capacity to enter the
3 market. PJM's tariff defines CONE as the nominal levelized cost of a
4 combustion turbine generating station.³³ For 2007-2011, the CONE value is
5 \$72,207 per MW-year, or \$6.02 per kW-month. For 2012-2013, PJM's
6 CONE has been set at \$112,868 per MW-year, or \$9.41 per kW-month.³⁴
7 These estimates are for avoided generation units only, and do not reflect
8 additional transmission and distribution capacity cost savings that may be
9 associated with interruptible load.

10 **Q. ARE THE CAPACITY VALUES FROM THE DOE REPORT AND**
11 **PJM'S 2007-2011 CONE LIKELY UNDERSTATED?**

12 **A.** Yes. The DOE report relies on a 2004 cost estimate, and the 2007-2011
13 CONE value was calculated in 2005. At the end of last year, PJM filed to
14 revise its CONE at FERC. In its filing, PJM explained:

15 ~~There is little dispute that construction costs have increased~~
16 ~~substantially since 2005, when the CONE estimate now in the PJM~~
17 ~~Tariff was completed. As the Commission's staff advised in a report~~
18 ~~to the Commission in June 2008, "new construction is becoming more~~
19 ~~expensive."~~ Similarly, Cambridge Energy Research Associates
20 ~~reported last year that its proprietary Power Capital Costs Index "has~~
21 ~~been on an upward trend since 2000 [with] a surge that began in 2005~~
22 ~~has [pushed] costs up 76 percent in the past three years."~~ An
23 ~~extensive study by the Brattle Group (separate from the Brattle Report~~
24 ~~on RPM) also documented recent electric plant increases and~~
25 ~~discussed their causes. That study shows, for example, that "the~~
26 ~~cumulative increase in the installation cost of new combined cycle~~
27 ~~units [from 2000 to 2006] was almost 95 percent with much of this~~
28 ~~increase occurring in 2006."~~ Moreover, according to the Handy
29 ~~Whitman Index, a widely used resource that tracks electric plant cost~~

assumed to be a "peaking unit," a generator specifically added to run in relatively few hours per year to meet peak system demand. Currently, peaking units are typically natural gas turbines with annualized capital costs on the order of \$75/kilowatt-year.

³³ PJM Tariff, Attachment DD at sections 2.16 and 2.58.

³⁴ *Id.* at section 5.10(a)(iv).

1 ~~escalations, the cost of combustion turbine power plants have~~
2 ~~increased by about 35 percent in the last three years.~~³⁵

3 These significant increases in capacity costs are reflected in PJM's 2012-
4 2013 CONE value. Other more recent peaking capacity cost estimates
5 reflect increased costs as well. ~~For example, South Carolina Electric & Gas~~
6 ~~Company (SCEG) recently presented expert testimony by ICF International,~~
7 ~~a noted international energy consulting firm, that estimated the avoided cost~~
8 ~~of a combustion turbine (including avoided costs related to transmission and~~
9 ~~distribution) at \$136.41 per kW year, or \$11.37 per kW month.~~³⁶
10 Interruptible credits reflecting avoided costs from the DOE, PJM, ~~and~~
11 ~~ICF/SCEG~~ analyses (including a 20 percent adjustment for reserves and
12 losses) are shown in Table 1 below.³⁷

Table 1. Interruptible Capacity Credits

Source	Year of Estimate	Interruptible Credit (\$/kW-mo.)	
		Capacity	Reserve+Losses
DOE	2004	\$6.25	\$7.50
PJM	2005	\$6.02	\$7.22
PJM	2000 2009	\$9.41	\$11.29
SCEG	2000	\$11.37	\$13.64

13

³⁵ ~~PJM Interconnection, LLC Amendments to the PJM Open Access Transmission Tariff and the Reliability Assurance Agreement under ER09-412-000 at 8-9 (December 12, 2008) (citations omitted).~~

³⁶ *Application of South Carolina Electric & Gas Company for the Establishment and Approval of DSM Programs and Rate Rider*, Docket No. 2009-261-E, South Carolina Public Service Commission, Direct Testimony of David K. Pickles at 13 (August 27, 2009).

³⁷ For example, the reserve- and loss-adjusted capacity credit for DOE shown in Table 1 is derived by multiplying the \$6.25 per kW-month capacity value by 1.20.

1 **Q. IS THE AVOIDED COST OF A PEAKING GENERATING UNIT**
2 **THE ONLY FACTOR THAT SHOULD BE CONSIDERED IN**
3 **DEVELOPING AN INTERRUPTIBLE CREDIT?**

4 **A.** No. Interruptible load helps suppliers avoid not only peaking capacity
5 costs. As FirstEnergy recognized during last year's ~~MRO~~^{ESP} proceeding,
6 interruptible load also avoids the cost of reserve capacity that would have
7 been required if the interruptible load were firm, as well as the cost of
8 transmission losses.³⁸ As a result, an interruptible capacity credit should be
9 adjusted (increased) to reflect the avoided cost of reserves and losses. A
10 reasonable rule-of-thumb for making this adjustment would be to increase
11 the estimated avoided peaking capacity cost by 15-20 percent.

12 In addition, since Rider ELR allows economic interruptions, the
13 interruptible credit under this rider should also reflect avoided energy costs.
14 In its 2007 CBP proposal, FirstEnergy indicated that the value of the
15 economic interruption credit should reflect market energy prices (LMPs),
16 with the credit netting to zero if a customer bought through all economic
17 interruptions. On the basis of this position, FirstEnergy indicated that the
18 economic interruption credit should range from \$1.60-\$2.60 per kW.³⁹
19 Based on FirstEnergy's analysis, a conservative estimate of avoided energy
20 costs associated with Rider ELR economic interruptions would be \$2.00 per
21 kW-month.

22 **Q. SHOULD OTHER FACTORS BE TAKEN INTO ACCOUNT IN**
23 **SETTING RIDER ELR'S INTERRUPTIBLE CREDIT?**

24 **A.** Yes. In addition to avoiding generation capacity costs, interruptible load
25 can be used to:

26 ■ Avoid bulk transmission costs. (Only the ICF/SCEG estimate
27 shown in Table 1 reflects such avoided costs.)

³⁸ Case No. 08-935-EL-SSO, Tr. Vol. II at 45-46.

³⁹ See Exhibit DWG-3.

1 ■ Promote economic development and manufacturing jobs retention.
2 FirstEnergy recognized this objective by putting part of its current
3 ELR interruptible credit in Rider EDR. As I noted earlier, the
4 availability of cost-based interruptible service helps attract and
5 retain large, energy-intensive industrial customers that provide
6 jobs and tax revenues in Ohio's communities—a fact that should not
7 be forgotten in structuring FirstEnergy's interruptible program.

8 **Q. HAS FIRSTENERGY ESTIMATED THE AVOIDED COST**
9 **ATTRIBUTABLE TO ITS INTERRUPTIBLE LOAD?**

10 **A.** In response to discovery, FirstEnergy stated:

11 FirstEnergy has no estimate for the value and avoided cost of
12 interruptible load for the years 2011, 2012, 2013, 2014, 2015 at this
13 time. The value for planning years 2011-2012 and 2012-2013 will be
14 set by the Transition Capacity Auctions to be conducted by PJM by
15 April 2010 as discussed in Brian Farley's testimony on pages 7 and 8.
16 PJM RPM will set the value of Emergency Load Response (Capacity)
17 for the FE control area for the planning year 2013-2014 in May 2010
18 with the results being posted to the PJM web-site. Each following
19 planning year's price for capacity will be determined and posted to
20 the PJM web-site each following May.⁴⁰

21 FirstEnergy also indicated that it "has no studies or analyses of the avoided
22 cost of interruptible load."⁴¹

⁴⁰ FirstEnergy Response to Nucor Request 1-34(a).

⁴¹ FirstEnergy Response to Nucor Request 1-34(d).

1 **Q. SHOULD AN INTERRUPTIBLE CREDIT BE BASED ON SHORT-**
2 **TERM MARKET MEASURES OF CAPACITY SUCH AS ANNUAL**
3 **COSTS OF CAPACITY BID IN RTO MARKETS OR AVAILABLE**
4 **IN THE WHOLESALE MARKET?**

5 **A.** No. Short-run market prices fluctuate to reflect current market conditions
6 for existing generating capacity, while long-run avoided costs reflect the
7 cost of adding new capacity to meet demand growth. Long-run—not short-
8 run—capacity costs more accurately reflect avoided cost savings
9 attributable to interruptible service. Short-run prices do not give a clear
10 signal regarding the cost of capacity to serve future peak demands. In
11 addition, basing an interruptible credit or price on short-run market prices is
12 similar to relying solely on spot market purchases to meet future energy
13 needs—both approaches increase consumer risks via unstable and
14 unpredictable prices. Moreover, interruptible rates that reflect short-term
15 price fluctuations may impede the development of robust and effective retail
16 interruptible programs.

17 Firm customers may also be negatively affected by an RFP-based
18 interruptible program during shortage periods where short-run marginal
19 pricing can drive the value of interruptible load far above long-run avoided
20 costs. For example, relying on spot markets is wonderful as long as excess
21 supply exists and prices are low. However, when generation supply
22 becomes scarce, short-run market prices can far exceed the cost of new
23 capacity that cannot be added immediately. A more traditional interruptible
24 program similar to Rider ELR should reflect the long-run avoided cost of
25 adding capacity—not a short-term value that reflects capacity shortages.

1 **Q. IS THE INTERRUPTIBLE CREDIT REFLECTED IN RIDER ELR**
2 **TOO HIGH?**

3 **A.** No. My testimony demonstrates that the \$10 per kW-month total credit in
4 FirstEnergy's Rider ELR is both cost-based and reasonable, and likely
5 understated.

6 **Q. IF PARTICIPATION IN RIDER ELR DOES NOT INCREASE,**
7 **COULD FIRSTENERGY ADD ADDITIONAL INTERRUPTIBLE**
8 **SERVICE TO ITS DEMAND RESPONSE PROGRAM TO HELP**
9 **ACHIEVE ITS STATUTORY DEMAND REDUCTION**
10 **REQUIREMENTS?**

11 **A.** Yes. Participation in Rider ELR is not likely to increase and may well
12 decrease in future years due to current constraints on the program. One
13 possible source of additional interruptible load is Rider OLR. However,
14 additional interruptible load under Rider OLR is unlikely unless the
15 Commission significantly increases its current credit to better reflect
16 avoided capacity costs. FirstEnergy's RFP process could also be used to
17 promote the development of new interruptible load. Problems with the RFP
18 process that I have identified could be mitigated if Rider ELR (with at least
19 the current total credit) is maintained as a source of stable interruptible
20 loads.

21 **Q. DO YOU HAVE SPECIFIC RECOMMENDATIONS FOR**
22 **MODIFYING FIRSTENERGY'S RFP PROCESS?**

23 **A.** Yes. The Commission should establish clear guidelines for any RFP
24 process and mechanism, including—at a minimum—the following features:
25 ■ Bidders should be allowed to designate a firm or "protected" portion
26 of their load that cannot be interrupted, and the rules should allow
27 the interruptible customer to reduce its load to the firm load level
28 (or, to not increase its load above the firm load level) when an

1 interruption is called. This approach would be consistent with the
2 approach in the current Riders ELR and OLR. In response to a
3 discovery request, FirstEnergy indicates that an RFP customer will
4 not be allowed to designate a firm load.⁴² This is also inconsistent
5 with PJM's approach for demand resources participating in the PJM
6 RPM process. The PJM rules explicitly allow a customer to choose
7 a "Firm Service Level" option for demand response.⁴³ If this option
8 is not available under the RFP, a customer must commit to taking a
9 specified amount of load offline when an interruption is called—
10 something that is impossible unless the customer operates at a 100
11 percent load factor. Allowing a customer to have a firm or protected
12 load that the customer will reduce to, or not increase its load above,
13 will allow for greater participation by industrial customers in the
14 RFP.

- 15 ■ FirstEnergy should be required to specify in advance a "default" or
16 minimum amount of interruptible load it will seek to acquire each
17 year through the RFP. This requirement will give potential bidders a
18 reasonable idea of the amount of interruptible load that FirstEnergy
19 will seek through the RFP going forward. The RFP process will not
20 be attractive to industrial customers if they do not know the level of
21 interruptible load FirstEnergy will seek to acquire each year, or even
22 whether any interruptible load will be needed at all. For example, if
23 FirstEnergy indicates it will seek to acquire at least 200 MW of
24 interruptible load through the RFP each year, then at least customers
25 will know they can bid to provide a portion of that load each year.
26 This will help industrial customers with their long-range energy
27 planning.

⁴² FirstEnergy Response to Nucor Request 1-15(d).

⁴³ See PJM Reliability Assurance Agreement at Schedule 6, Section H. A Firm Service Level demand resource is defined as "load management achieved by a customer reducing its load to a pre-determined level."

- 1 ■ FirstEnergy should be required to accept RFP bids for interruptible
2 load commitments of up to three years instead of the 1-year limit
3 currently proposed. Year-to-year rate stability is vital to large
4 industrial customers with energy-intensive loads for which
5 electricity costs are a major cost of doing business. FirstEnergy's
6 RFP program as proposed fails to provide this year-to-year rate
7 stability since it does not allow customers to make multi-year bid
8 offers. Allowing a customer to make up to a 3-year bid would
9 mitigate this problem.
- 10 ■ Clear guidelines should be established for operating the RFP
11 demand response program, including specifying circumstances
12 under which an interruption may be called; minimum interruption
13 notice; maximum and minimum duration of interruptions; limits on
14 the number of annual interruptions; and penalties or other
15 consequences if a customer fails to interrupt when requested.
- 16 ■ Non-SSO customers should be allowed to participate in the RFP.⁴⁴
- 17 ■ Paying winning bidders the bid clearing price instead of the price as
18 bid should be considered.
- 19 ■ FirstEnergy should be required to submit its final RFP process and
20 all associated documents and agreements to the Commission for
21 approval with a reasonable opportunity for review and input by
22 interested stakeholders and a hearing if requested.

23 **CLASS-SPECIFIC COST DIFFERENCES**

24 **Q. HOW IS THE COST OF GENERATION SERVICE REFLECTED IN**
25 **THE PROPOSED MRO RATES?**

26 **A.** FirstEnergy will recover its cost of resources purchased in the CBP
27 primarily through Rider GEN and also Rider GCR. Rider GEN is a uniform

⁴⁴ FirstEnergy has confirmed its intention to allow such customers to participate. FirstEnergy Response to Nucor Request 1-14.

**STATE OF OHIO
BEFORE THE
PUBLIC UTILITIES COMMISSION**

CASE NO. 09-906-EL-SSO

**IN THE MATTER OF THE APPLICATION OF
OHIO EDISON COMPANY, THE CLEVELAND ELECTRIC ILLUMINATING
COMPANY, AND THE TOLEDO EDISON COMPANY FOR APPROVAL OF A
MARKET RATE OFFER TO CONDUCT A COMPETITIVE BIDDING PROCESS
FOR STANDARD SERVICE OFFER ELECTRIC GENERATION SUPPLY,
ACCOUNTING MODIFICATIONS ASSOCIATED WITH RECONCILIATION
MECHANISM, AND TARIFFS FOR GENERATION SERVICE**

**EXHIBITS TO THE
DIRECT TESTIMONY OF
DR. DENNIS W. GOINS
ON BEHALF OF NUCOR STEEL MARION, INC.**

December 4, 2009

EXHIBIT DWG-1

FIRSTENERGY'S RESPONSES TO SELECTED DISCOVERY REQUESTS

NUCOR MRO Set 1

Witness: Paganie

Case No. 09-906-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 1 - Referring to potential interruptible or curtailable load:

7

- (a) Provide FirstEnergy's best estimate by operating company of potential interruptible/curtailable load not currently under contract.
- (b) Are there any studies or analyses of potential interruptible/curtailable load on the FirstEnergy system?
- (c) If the answer to (b) is yes, provide such studies and all related documents.

Response:

- a) The Companies have no such estimate.
- b) No.
- c) See response b).

NUCOR MRO Set 1**Witness: Paganie**

Case No. 09-906-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 1 - 10 Provide an estimate, by year, of the level of peak demand reduction (in MWs) FirstEnergy projects it will need for each Ohio operating company to meet the annual peak demand reduction benchmarks set forth in Section 4928.66(A)(1)(b) of the Revised Code.

Response:

The following is a table showing an estimate of each operating company's peak demand reduction targets by year. It should be emphasized that this is a preliminary nonbinding estimate based upon current information and interpretations of rules that are not yet in effect.

Target Peak Demand Reduction (in MWs)				
Year	CEI	OE	TE	Total
2009	42	53	20	114
2010	71	91	34	197
2011	102	130	50	282
2012	134	173	66	373
2013	166	213	83	462
2014	198	253	100	550
2015	230	292	117	638
2016	261	331	133	724
2017	291	369	148	809
2018	321	408	164	893
2019	320	407	164	891
2020	320	406	164	890
2021	321	407	164	892
2022	322	409	165	895
2023	323	411	165	898
2024	324	412	165	901
2025	325	414	165	904

NUCOR MRO Set 1**Witness: Paganie**

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RESPONSES TO REQUEST

Nucor Set 1 - 11 Of the peak demand reduction FirstEnergy is required to achieve each year under section 4928.66(A)(1)(b) of the Revised Code, how much does FirstEnergy project will be achieved through the use of interruptible/curtailable load?

Response:

The following table is a *preliminary* non-binding estimate of the peak demand reduction in MW's that needs to be achieved through the use of interruptible/curtailable load. This estimate was calculated based upon the response to Nucor Set 1 -10, less the preliminary estimate of peak demand reduction that may be acquired from; 1) energy efficiency measures, 2) Mercantile customer-sited programs, and 3) other peak demand reduction programs.

<i>Estimate of Required Interruptible/Curtailable Load Required to meet Peak Demand Reduction Requirements</i>				
<i>Year</i>	<i>CEI</i>	<i>OE</i>	<i>TE</i>	<i>Total</i>
2009	19	19	6	44
2010	22	25	9	55
2011	37	41	16	93
2012	51	57	18	127
2013	51	57	19	127
2014	44	47	14	105
2015	37	39	8	84
2016	31	31	3	64
2017	26	22	-	48
2018	21	14	-	34
2019	-	-	-	-
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-

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RESPONSES TO REQUEST

Nucor Set 1 - Referring to the peak demand reduction RFP process described in Mr. Paganie's
13 testimony, Attachment JEP-1:

- (a) Has FirstEnergy implemented this process or a similar process in any of its Pennsylvania or New Jersey operating companies?
- (b) If the answer to (a) is yes, provide a description of any such program and copies of documents that refer or relate to the operation of such program.
- (c) Is FirstEnergy aware of any other utility or other entity that has implemented the proposed RFP process or a similar process to acquire interruptible or curtailable load?
- (d) If the answer to (c) is yes, provide a description of any such program and copies of documents that refer or relate to the operation of such program.
- (e) Provide complete details (to the degree that they exist) on how FirstEnergy expects the RFP process to work.
- (f) Provide a copy of all reports, studies, and analyses performed or used in developing the proposed RFP process.
- (g) Has FirstEnergy performed any studies or analyses to estimate the effectiveness of the proposed RFP process in acquiring the demand response necessary to meet the peak demand reduction benchmarks of Section 4928.66(A)(1)(b) of the Revised Code? If so, provide a copy of all such studies and analyses.
- (h) Has FirstEnergy developed the following documents referenced in Attachment JEP-1: RFP calendar; registration form; communication

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RESPONSES TO REQUEST

protocols; bidding rules; standard bid proposal; and a standard contract customers must agree to if they are a winning bidder? If so, provide a copy of such documents.

- (i) If FirstEnergy has not developed the documents referred to in subpart (h), when will it do so? Does FirstEnergy intend to file these documents with the Ohio Commission for approval?
- (j) Identify and provide all related documents.

Response:

- a) No.
- b) Please see response a) immediately above.
- c) No.
- d) Please see response c) immediately above.
- e) Please refer to the attachment to John Paganie's testimony.
- f) FirstEnergy has prepared no studies, analyses or reports for the RFP process.
- g) FirstEnergy has prepared no studies or analyses to estimate the effectiveness of the proposed RFP process.
- h) FirstEnergy has not developed any of the referenced documents.
- i) The documents will be prepared at least two months prior to holding the RFP. FirstEnergy does not intend to file these documents with the Ohio Commission for approval.
- j) Please see response to h) immediately above.

NUCOR MRO Set 1

Witness: Paganie

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RESPONSES TO REQUEST

Nucor Set 1 - If a customer takes generation service from a competitive supplier, will the customer be
14 able to participate in the interruptible/curtailable RFP process? If not, why not?

Response: Yes.

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RESPONSES TO REQUEST

Nucor Set 1 - 15 Referring to the customer notification and payment provisions described in section III of

Attachment JEP-1:

- (a) How much notification will FirstEnergy provide prior to when a customer must curtail its demand?
- (b) Why does FirstEnergy propose paying winning bidders once a year, instead of providing a monthly credit as is currently done under Riders ELR and OLR?
- (c) If FirstEnergy pays winning bidders only once a year, when would this payment occur?
- (d) In submitting a bid in the interruptible RFP process, will the customer be permitted to identify a firm or protected load that is not subject to interruption, so that they will reduce their load to the firm or protected load level indicated based on some notice period similar to the current interruptible/curtailable rates?
- (e) In submitting a bid in the interruptible RFP process, will the customer be permitted to bid different parts of their load for different prices?
- (f) Explain in detail the answers to (d) and (e) above.
- (g) Provide FirstEnergy's best estimate of the expected cost to FirstEnergy of interruptible load under this RFP process on an average per kW basis and total basis and provide any and all related documents.

Response: a) FirstEnergy will provide as much advance notice of the interruption to the customer as commercially reasonable. The minimum notification will need to meet the

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RESPONSES TO REQUEST

- requirements of PJM such that the interruptible load will qualify as capacity.
- b) The Companies propose paying customers once a year to reflect that no payment will be made until the Customers have complied with their obligations. In addition, penalties may be enforced for non-compliance.
 - c) Payment may occur as soon as practical after the May 31st of the end of the PJM planning year during which the demand response is utilized.
 - d) No. Customers will be bidding capacity equivalent loads.
 - e) Yes, Customers would be able to bid a price sensitive supply curve, as long as the increments of MW bid are in 0.5 MW blocks or larger.
 - f) Please see responses d) and e) immediately above.
 - g) FirstEnergy has not developed an estimate at this time. Customers will compete against each other to provide this service based upon price, which should lead to a competitive cost.

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RESPONSES TO REQUEST

Nucor Set 1 - Paragraph 71 of the Application states: "the Companies would be entitled to interrupt service to participating customers only when necessary to meet the target load-reduction requirements under R.C. Section 4928.66 or for system emergencies."

16

- (a) Please explain in detail the conditions when interruptions would be "necessary to meet the target load-reduction requirements under R.C. Section 4928.66 or for system emergencies."
- (b) Please explain what would constitute a system emergency for purposes of calling interruptions.
- (c) Who would have the authority to interrupt load – the relevant Ohio operating company, the RTO, or both?
- (d) Please confirm that, under FirstEnergy's proposal, interruptible load can be interrupted in the case of a system emergency at anytime, and not just during peak demand periods.
- (e) What limits if any will apply to interruptions or curtailments?
- (f) Provide a best estimate of the number of interruptions or curtailments each year.
- (g) Will customers be permitted to buy-through non-emergency interruptions?
- (h) If the answer to (g) is yes, describe in detail the terms and conditions of any buy-through.
- (i) Identify and provide all documents related to the answers to this request.

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RESPONSES TO REQUEST

Response:

- a) System emergency interruption requests will be called per the RTO rules pertaining to what is necessary to count demand response as capacity, and/or to ensure reliability of service for firm customers. Since the PUCO rules pertaining to this subject are not yet in effect, it is impossible at this time to explain whether there are any additional conditions that would lead to interrupting service other than those previously listed in this response in order to comply with load-reduction targets under R.C. Section 4928.66.
- b) A system emergency for this purpose would be a declared emergency by a RTO, ATSI or one or all of the Companies, or a request by a RTO that mandatory demand responsive load be curtailed.
- c) Please see the response to b) immediately above.
- d) Interruptible load can be interrupted at anytime (not just during on-peak periods) in the case of an emergency.
- e) Please see the response to d) above.
- f) There are no estimates for emergency interruptions. RTO planning perspective is done such that on a statistical basis there is potential of one interruption in ten years occurring while the worst two contingencies happen.
- g) There will be no "non-emergency" interruptions. Any interruptions call upon a customer for the load provided as a winning bidder of the RFP can not be bought through.
- h) Please see response to g) immediately above.
- i) Please see John Paganie's testimony and attachment.

NUCOR MRO Set 1
Witness: Fanelli

Case No. 09-906-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 1 - Identify and explain in detail the economic development initiatives or programs the
20 Companies intend to implement through the MRO. Identify and provide all related documents.

Response: The economic development initiatives proposed by the Companies as part of the MRO are set out in Rider EDR, which is addressed on pages 10-11 of the direct testimony of Company witness Fanelli.

NUCOR MRO Set 1

Witness: Paganie

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RESPONSES TO REQUEST

Nucor Set 1 - Identify and explain in detail all options considered by FirstEnergy to provide interruptible
32 service other than the proposed RFP approach. Identify and provide all related documents.

Response: Other than the RFP approach, FirstEnergy considered the option of having a new retail tariff for interruptible load somewhat similar to current Rider OLR. Current Riders ELR and OLR expire on May 31, 2011. No documents exist, other than what have been filed in this case.

NUCOR MRO Set 1

Witness: Paganie

Case No. 09-906-EL-SSO

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RESPONSES TO REQUEST

Nucor Set 1 - Referring to the proposed RFP process for interruptible load:
33

- (a) Does FirstEnergy have any study or analysis to determine how much interruptible load they can obtain through the RFP process?
- (b) Does FirstEnergy have any study or analysis that shows that they will be able to acquire the needed peak demand reduction to meet the annual peak demand benchmarks through the RFP process?
- (c) Identify and provide a copy of any studies responsive to (a) or (b) above.

Response:

- a) No.
- b) No.
- c) See response b).

NUCOR MRO Set 1

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RESPONSES TO REQUEST

Nucor Set 1 - Referring to the interruptible or curtailable load:
34

- (a) What is FirstEnergy's best estimate of the value and avoided cost per kW of interruptible load for each of the following years: 2011, 2012, 2013, 2014, 2015?
- (b) Provide a workpaper detailing the development of any estimate in response to (a) above.
- (c) Explain in detail the basis for the estimate provided in (a) above.
- (d) Provide a copy of all studies or analyses of interruptible load, including its value or avoided cost.

Response:

- a) FirstEnergy has no estimate for the value and avoided cost of interruptible load for the years 2011, 2012, 2013, 2014 and 2015 at this time. The value for planning years 2011-2012 and 2012-2013 will be set by the Transition Capacity Auctions to be conducted by PJM by April 2010 as discussed in Brian Farley's testimony on pages 7 and 8. PJM RPM will set the value of Emergency Load Response (Capacity) for the FE control area for the planning year 2013-2014 in May, 2010 with the results being posted to the PJM web-site. Each following planning year's price for capacity will be determined and posted to the PJM web-site each following May.
- b) FirstEnergy has no workpapers.
- c) FirstEnergy has no estimate.
- d) FirstEnergy has no studies or analyses of the avoided cost of interruptible load. The value of interruptible load is set as described in response a).

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RESPONSES TO REQUEST

Nucor Set 2 - 2

Referring to FirstEnergy's RFP proposal to acquire interruptible load/demand response:

- (a) Identify the amount of interruptible load FirstEnergy would seek to acquire under the RFP each year for 2011- 2020.
- (b) Explain in detail how FirstEnergy would propose to determine the amounts of such load to request.
- (c) Does FirstEnergy expect that all current interruptible customers under Riders ELR and OLR would be able to provide their full amount of curtailable load under the RFP?
- (d) Explain the answer to (c) above in detail.
- (e) If the answer to (c) is no, identify the amount of current interruptible load (in MWs and as a percentage) that would not be able to be interruptible under the RFP for each year 2011-2020.
- (f) Explain whether FirstEnergy plans to acquire interruptible load or demand response beyond the amount required to meet statutory peak reduction targets.
- (g) Referring to the answer to (f) above:
 - (i) If the answer is no, explain in detail why not.
 - (ii) If the answer is yes, explain in detail why.
 - (iii) If the answer is yes, explain in detail how much and why.

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RESPONSES TO REQUEST

Response:

- a) Please see response to Nucor Set 1- 11.
- b) Please see response to Nucor Set 1- 11.
- c) Yes. The Companies have no reason to believe that current interruptible customers will not have the physical ability to continue to be interruptible.
- d) Please see c) immediately above.
- e) The answer to c) above was yes.
- f) Other than incidental over compliance of the statutory peak reduction targets due to demand response, energy efficiency programs, or mercantile programs as they are being developed, the Companies do not plan to acquire interruptible load or demand response beyond the amount required to meet statutory peak reduction targets.
- g) The Companies see no need to plan to over comply with statutory peak reduction targets.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - 4 Regarding the "energy efficiency measures" referred to in FirstEnergy's response to NUC-1-11:

- (a) Provide a description of these energy efficiency measures.
- (b) Of the peak demand reduction FirstEnergy is required to achieve each year under section 4928.66(A)(1)(b) of the revised code, how much does FirstEnergy project will be achieved through the use of these energy efficiency measures?
- (c) Please identify and provide all studies and analyses prepared or relied upon by FirstEnergy in developing the estimates of energy efficiency measures required to meet the peak demand reduction benchmarks.

Response:

(a) Community Connections, Transmission and Distribution Projects, Direct Load Control, Aclara Software, Online Energy Efficiency Products, Mercantile EE Savings, CFL Program Low Income, CFL Program.

(b) The following is a preliminary and non-binding estimate of the energy efficiency programs contribution toward peak demand reduction.

	<u>MW's</u>
2009	20
2010	22
2011	22
2012	13

(c) Objection. The requested information is too voluminous for copying. The Companies will make such requested information available for inspection and review at their office at and during a mutually agreed upon time.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - 6 Regarding the "other peak demand reduction programs" referred to in FirstEnergy's response to NUC-1-11:

- (a) Identify and provide a description of these other peak demand reduction programs.
- (b) Of the peak demand reduction FirstEnergy is required to achieve each year under section 4928.66(A)(1)(b) of the revised code, how much does FirstEnergy project will be achieved through the use of these other peak demand reduction programs?
- (c) Identify and provide all studies and analyses prepared or relied upon by FirstEnergy in developing the estimates of other peak demand reduction programs required to meet the peak demand reduction benchmarks.

Response:

- (a) A preliminary list and description of other peak demand reduction programs currently planned or in place by the Companies are:
 - Direct load control** – this program is for residential customers and involves peak load reduction achieved by a programmable thermostat capable of direct load control installed in the customer's residence.
 - Aclara software** – this is an on-line audit tool that enables customer savings through recommended home improvements.
 - Online energy efficiency products** – the products are available through the Companies' website.
 - CFL Program Low Income Residential CFL program**
- (b) Preliminary and non-binding estimates are for these programs to yield savings of 16.8 MWs in 2009, 19 MWs in 2010, 18.8 MWs in 2011 and 9.7 MWs in 2012.
- (c) Objection. The requested information is too voluminous for copying. The Companies will make such information available for inspection and review at FirstEnergy's Columbus office at and during a mutually agreed upon time.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - 7

Regarding FirstEnergy's response to NUC-1-15(b):

- (a) Explain in detail how FirstEnergy will make the determination whether a customer has complied with its obligation.
- (b) Explain in detail how FirstEnergy will make the determination whether a customer has complied with its obligation if the customer has not been called upon to interrupt.
- (c) Describe in detail the penalties that may be enforced for non-compliance.

Response:

- a) The Companies' determination of whether a customer has complied with its obligation will be contingent upon such customer complying with Commission rules and regulations, applicable regional transmission organization requirements, and the requirements set forth in the Companies' MRO filing and corresponding testimony.
- b) See Section (a) above.
- c) Any penalties will be set forth in the applicable RFP documents and tariff.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - 8

Regarding FirstEnergy's response to NUC-1-15(d):

- (a) Explain in detail what qualifies a customer's load as a "capacity equivalent load."
- (b) Assume a customer has 20 MW of load, and wants to designate 5 MW as firm or protected load, and wants the remaining 15 MW to be interruptible. Could the customer's 15 MW be considered capacity equivalent load? If not, why not?

Response:

- a) Capacity equivalent load is such load that meets Commission rules and regulations, applicable regional transmission organization requirements, and the requirements set forth in the Companies' MRO filing and corresponding testimony.
- b) A customer's designated MW load for the purposes of this RFP will qualify as capacity equivalent load if it meets Commission rules and regulations, applicable regional transmission organization requirements, and the requirements set forth in the Companies' MRO filing and corresponding testimony.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - Explain in detail why FirstEnergy does not propose to continue Rider ELR, and
15 identify and provide all related documents.

Response: Rider ELR expires under its own terms on May 31, 2011. With the implementation of the proposed peak demand reduction RFP, Rider ELR is no longer needed to assist the Companies in the achievement of their peak demand reduction benchmarks.

Nucor MRO Set 2
Witness: Paganie

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 - Explain in detail why FirstEnergy does not propose to continue Rider OLR, and
16 identify and provide all related documents.

Response: Rider OLR expires under its own terms on May 31, 2011. With the implementation of the proposed peak demand reduction RFP, Rider OLR is no longer needed to assist the Companies in the achievement of their peak demand reduction benchmarks.

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

Nucor Set 2 -
17

Referring to the Interruptible Credit provisions of current Rider EDR which provide a \$8.05/kW credit for customers served under Rider ELR:

- (a) Explain in detail FirstEnergy's view as to the current purpose of this credit.
- (b) Explain in detail why FirstEnergy proposes to delete this language and credit.
- (c) Does FirstEnergy propose to mitigate the impact of rate increases to customers currently served under Rider ELR that receive this credit?
- (d) If the answer to (c) is yes, explain in detail how.
- (e) Provide FirstEnergy's estimate of the rate impact of elimination of this credit on current Rider ELR customers (and explain in detail how this estimate was developed).
- (f) Identify and provide all related documents.

Response:

- (a) The credit was implemented as a result of the Stipulation in Case No. 08-935-EL-SSO in a manner consistent with all provisions of Rider EDR. While the credit does not have a single, specific purpose, it helps transition customers historically served under interruptible tariffs or contracts to the new rate structure initially established in Case No. 07-551-EL-AIR and fully adopted as part of the Companies' ESP. The credit also provides incentives for economic development and represents compensation for the Companies' ability to call for economic interruptions.
- (b) With the expiration of Rider ELR, this language is no longer applicable.
- (c) Objection. The Companies do not accept the assumption implicit in the question that all customers currently served under Rider ELR will see rate increases as a result of this filing. For existing ELR customers, potential rate impacts will be affected by various factors, including, but not limited to

Case No. 09-906-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

the following: the June 2011 SSO generation price that is yet to be determined, customers' price for generation service if they shop as firm customers, customers' price for generation service if they shop as interruptible customers, value the customers receive for being successful participants in the Companies' proposed RFP for peak demand reduction, and value the customers receive for participating in RTO programs for demand response.

- (d) Please see the response to Nucor Set 2-17 part (c).
- (e) The estimate can be derived from Schedule 1 filed with the Companies' Application and the information provided in the Companies' response to Nucor Set 2-14 part (b).
- (f) Please see the response to Nucor Set 2-17 part (e).

NOPEC MRO Set 2

Case No. 09-906-EL-SSO

Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

NOPEC Set 2

- 14

Identify any and all reasons why NOPEC's customers would benefit from FirstEnergy's interruptible program as described in the Application.

Response

Objection. The request calls for speculation as the Companies' cannot know which customers will be part of a NOPEC governmental aggregation program during the period the interruptible program is in place. Subject to and without waiving the objection, all customers benefit from the Companies' interruptible program in at least two ways. First, the interruptible program provides broad energy efficiency and demand-side management benefits. Second, the ability to interrupt service and lower demand at critical times may lead to lower costs for generation service – benefiting all of the Companies' SSO customers, as well as shopping customers who will have a lower price point at which they may shop for competitive electric service.

NOPEC MRO Set 2
Witness: Warvell

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

NOPEC Set 2
- 15

Please explain in greater detail how the "ability to interrupt service and lower demand at critical times may lead to lower costs for generation service," as stated on page 27 of the Application.

SSO suppliers will have lower capacity obligations and associated expenses to serve the SSO load because the Companies will reduce the SSO suppliers' capacity obligations by the MW's provided from the Companies' peak load reduction programs. In addition, the SSO suppliers' risk of a high spike in energy prices may be lessened due to interruption of service to customers during times of supply shortages. Lowering an SSO supplier's risk in this manner may lead to lower bids for generation service.

NOPEC MRO Set 2
Witness: Warvell

Case No. 09-906-EL-SSO
Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism, and Tariffs for Generation Service

RESPONSES TO REQUEST

NOPEC Set 2
- 17

Can FirstEnergy guarantee that the "ability to interrupt service and lower demand at critical times" will lead to lower generation costs? If not, how will shopping customers have a "lower price point at which they may shop for competitive electric service," as stated on pages 27-28 of the Application?

No, the Companies cannot guarantee lower prices, but believe that interruptible service will lead to lower capacity requirements for SSO suppliers and that some of the risk of higher energy prices will be mitigated due to interruptible service, both of which should lead to lower bid prices.

EXHIBIT DWG-2

FIRSTENERGY RIDERS ELR, OLR AND EDR

RIDER ELR
Economic Load Response Program Rider

APPLICABILITY:

This Economic Load Response Program Rider ("Program") is available to customers taking service under the Company's general service tariffs served at primary voltages or higher voltages provided that the customer meets all of the following five conditions at the time of initiation of service under this Rider and on a continuing basis thereafter: (i) the customer took service under the Company's interruptible tariffs set forth below as of February 1, 2008; (ii) the customer can successfully demonstrate to the Company that it can reduce its instantaneous measured load to a pre-established contract Firm Load (as defined under Other Provisions, paragraph A., below) within ten minutes of notification provided by the Company without the need of a generator (A customer may intend to use a generator to reduce its usage to below its Firm Load, but if the generator does not operate, the customer must still reduce its usage to or below its Firm Load. Failure of a customer to reduce its usage to or below its Firm Load shall result in the consequences listed in the Emergency Curtailment Event Section herein.); (iii) the customer executes the Company's standard Program contract; (iv) the customer is taking generation service from the Company under the Generation Service Rider (GEN); and (v) the customer is not participating in any other load curtailment program, including without limitation a demand response program offered by the Midwest Independent Transmission System Operator, Inc. ("MISO") or any other independent system operator.

Interruptible Electric Arc Furnace Rate	Original Sheet No. 29
Interruptible Rider – General Service Large and High Use Manufacturing	Original Sheet No. 73
Interruptible Rider – Metal Melting Load	Original Sheet No. 74
Interruptible Rider – Incremental Interruptible Service	Original Sheet No. 75

RATES:

In addition to any other charges under any other rate schedules applicable to customer's service, customers participating in the Program shall also pay the charges and receive the credit set forth below:

Charges:

Program Administrative Charge: \$150.00 per month

EBT Charge:

During an Economic Buy Through Option Event (as defined under Other Provisions, paragraph E., below), the portion of the customer's actual measured load that exceeds its pre-established contract Firm Load for any and all hours during such event shall be assessed an EBT Charge, which is calculated for each hour of the event as follows:

RIDER ELR
Economic Load Response Program Rider

$$\text{EBT Charge} = (\text{AL} \times \text{MPD}) \times (1 + \text{LAF}) \times ([1/(1 - \text{CAT})])$$

Where:

AL = the customer's actual hourly load during an Economic Buy Through Option Event that exceeds the customer's pre-established contract Firm Load.

MPD = the market price differential, which shall be calculated by subtracting the applicable charges set forth in the Generation Service Rider (GEN) from the MISO LMP for the period in which the Economic Buy Through Option Event occurred for each hour that results in a MPD greater than zero.

MISO LMP is the final Day Ahead Locational Marginal Price as defined and specified by MISO at the Commercial Pricing Node "FESR" (or its equivalent) during the applicable hour(s).

CAT = the Ohio Commercial Activity Tax rate (CAT) as established in Section 5751.03 of the Ohio Revised Code.

LAF = Loss Adjustment Factor
3.0% for primary voltages
0.1% for subtransmission voltages
0.0% for transmission voltages

ECE Charge:

During an Emergency Curtailment Event (as defined under Other Provisions, paragraph D., below), the portion of the customer's actual measured load that exceeds its pre-established contract Firm Load for any and all hours during such event shall be assessed an ECE Charge which is calculated for each hour of the event as follows:

$$\text{ECE Charge} = (\text{AL} \times \text{MISO LMP} \times 300\%) \times (1 + \text{LAF}) \times ([1/(1 - \text{CAT})])$$

RIDER ELR
Economic Load Response Program Rider

Program Credit ("PC"):

Customers taking service under this Rider shall receive a monthly Program Credit which shall be calculated as follows:

$$PC = CL \times (\$1.95) /kW/month$$

Where:

CL is the Curtailable Load, which shall be calculated by the Company for each customer by subtracting the customer's contract Firm Load from its monthly highest thirty (30) minute integrated kW load occurring during the non-holiday weekday hours of 11 a.m. to 5 p.m. Eastern Standard Time (equivalent to noon to 6 p.m. EDT). In no circumstance can the CL be negative nor can the CL be in excess of a contract amount determined based upon the customers 12 month history as of February 1, 2008. Holidays are defined as New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

OTHER PROVISIONS:

A. Firm Load

For purposes of this rider, "Firm Load" shall be that portion of a customer's electric load that is not subject to curtailment. A customer may request a reduction to its contract Firm Load no more than once in any twelve month period. The Firm Load may be reduced to the extent that such reduction is consistent with other terms and conditions set forth in this Rider. Any such change in Firm Load shall be applied beginning with the customer's January bill immediately following the year in which the change has been approved by the Company, provided that advance written request is provided to the Company no less than thirty (30) days prior to the effective billing month of the change. The Company may increase the Firm Load at any time if the Company, at its sole discretion, determines the Firm Load is at a level that the customer fails to demonstrate that they can reach. The Company shall promptly notify the customer of any such change.

B. Load Response Program Contract

Customers taking service under this optional Rider shall execute the Company's standard Program contract which, among other things, will establish the Customer's Firm Load.

C. Metering

The customer must arrange for interval metering consistent with the Company's Miscellaneous Charges, Tariff Sheet 75.

RIDER ELR
Economic Load Response Program Rider

D. Emergency Curtailment Event

Upon no less than ten minutes advance notification provided by the Company, a customer taking service under this Rider must curtail all load above its Firm Load during an Emergency Curtailment Event consistent with the Company's instructions. For purposes of this Rider, an Emergency Curtailment Event shall be one in which the Company, a regional transmission organization and/or a transmission operator determines, in its respective sole discretion, that an emergency situation exists that may jeopardize the integrity of either the distribution or transmission system in the area.

During the entire period of an Emergency Curtailment Event, the customer's actual measured load must remain at or below its Firm Load with such load being measured every clock half hour. A customer's actual measured load shall be determined using the greater of the customer's highest lagging kVA or highest kW during the Emergency Curtailment Event.

If at any time during the Emergency Curtailment Event a customer's actual measured load exceeds its contract Firm Load, the Company may disconnect the customer from the transmission system for the duration of the Emergency Curtailment Event, at the customer's expense. The Company shall not be liable for any direct or indirect costs, losses, expenses, or other damages, special or otherwise, including, without limitation, lost profits that arise from such disconnection.

If at any time during the Emergency Curtailment Event a customer's actual measured load exceeds 110% of its Firm Load, the customer shall be subject to all four (4) of the following: (i) forfeit its Program Credit for the month in which the Emergency Curtailment Event occurred; (ii) pay the ECE Charge set forth in the Rates section of this Rider; (iii) pay the sum of all Program Credits received by the customer under the Program during the immediately preceding twelve billing months which shall include credits from this Rider and the Economic Development Rider; and (iv) the Company's right, at its sole discretion, to remove the customer from the Program for a minimum of 12 months.

If at any time during the Emergency Curtailment Event a customer's actual measured load is greater than 100% and less than or equal to 110% of its Firm Load during the Emergency Curtailment Event, the customer shall forfeit its Program Credit for the month in which the Emergency Curtailment Event occurred and shall pay the ECE Charge set forth in the Rates section of this Rider.

In the event of any conflict between the terms and conditions set forth in this Rider and other service reliability requirements and/or obligations of the Company, the latter shall prevail.

E. Economic Buy Through Option Event

Upon no less than a 90 minute advance notification provided to the customer, the Company shall call an Economic Buy Through Option Event ("EBT") when a "Market Premium Condition" exists. A Market Premium Condition is defined as a point in time that the MISO LMP exceeds the product of 1.5 times the wholesale price resulting from the Company's competitive bid process held for generation service commencing on June 1, 2009. The number of hours of EBT cannot exceed 10% of the hours in any twelve month period beginning in June of each calendar year.

RIDER ELR
Economic Load Response Program Rider

F. Notification

Customers served under this Rider shall be provided notification of Economic Buy Through Option Events and Emergency Curtailment Events by the Company. Customers shall be provided clock times of the beginning and ending of these events, except the Emergency Curtailment Event notification may be stated such that customers must curtail their actual measured load to its Firm Load in 10 minutes from the time the notification is issued. Receipt of curtailment notifications shall be the sole responsibility of the customer.

Notification of an interruption Economic Buy Through Option Event and Emergency Curtailment Event consists of an electronic message issued by the Company to a device or devices such as telephone, facsimile, pager or email, selected and provided by the customer and approved by the Company. Two-way information capability shall be incorporated by the Company and the customer in order to provide confirmation of receipt of notification messages. Operation, maintenance and functionality of such communication devices selected by the customer shall be the sole responsibility of the customer.

G. Term

This Rider shall become effective for service rendered beginning June 1, 2009, and shall expire with service rendered through May 31, 2011.

A customer may terminate its participation in the Program upon no less than twelve (12) months advance written notice to the Company. Except as otherwise provided in this Rider, a qualifying customer may return to the Program at any time after a hiatus from the Program of at least one (1) year.

H. Conditions

Payment by the customer of all charges herein is a condition of service under this Economic Load Response Program Rider.

RIDER OLR
Optional Load Response Program Rider

APPLICABILITY:

This Optional Load Response Program Rider ("Program") is available to any customer taking service under the Company's general service tariffs served at primary voltages or higher voltages provided that the customer meets all of the following five conditions at the time of initiation of service under this Rider and on a continuing basis thereafter: (i) the customer has at least one megawatt of Realizable Curtailable Load ("RCL"); (ii) the customer can successfully demonstrate to the Company that it can reduce its instantaneous measured load to a pre-established contract Firm Load (as defined under Other Provisions, paragraph A., below) within ten minutes of notification provided by the Company without the need of a generator (A customer may intend to use a generator to reduce its usage to below its Firm Load, but if the generator does not operate, the customer must still reduce its usage to or below its Firm Load. Failure of a customer to reduce its usage to or below its Firm Load shall result in the consequences listed in the Emergency Curtailment Event Section herein.); (iii) the customer executes the Company's standard Program contract; and (iv) the customer is taking generation service from the Company under the Generation Service Rider (GEN); (v) the customer is not participating in any other load curtailment program, including without limitation a demand response program offered by the Midwest Independent Transmission System Operator, Inc. ("MISO") or any other independent system operator. This Rider is not applied to customers during the period the customer takes electric generation service from a certified supplier.

RATES:

In addition to any other charges under any other rate schedules applicable to customer's service, customers participating in the Program shall also pay the charges and receive the credit set forth below:

Charges:

Program Administrative Charge: \$150.00 per month

ECE Charge:

During an Emergency Curtailment Event (as defined under Other Provisions, paragraph D., below), the portion of the customer's actual measured load that exceeds its pre-established contract Firm Load for any and all hours during such event shall be assessed an ECE Charge which is calculated for each hour of the event as follows:

$$\text{ECE Charge} = (\text{AL} \times \text{MISO LMP} \times 300\%) \times (1 + \text{LAF}) \times \left(\frac{1}{1 - \text{CAT}}\right)$$

Where:

AL = the customer's actual hourly load during an Emergency Event that exceeds the customer's pre-established contract Firm Load.

MISO LMP is the final Day Ahead Locational Marginal Price as defined and specified by MISO at the Commercial Pricing Node "FESR" (or its equivalent) during the applicable hour(s).

CAT = the Ohio Commercial Activity Tax rate as established in Section 5751.03 of the Ohio Revised Code.

Filed pursuant to Order dated May 27, 2009, in Case No. 08-935-EL-SSO et al., before

The Public Utilities Commission of Ohio

Issued by: Richard R. Grigg, President

Effective: June 1, 2009

RIDER OLR
Optional Load Response Program Rider

LAF = Loss Adjustment Factor
3.0% for primary voltages
0.1% for subtransmission voltages
0.0% for transmission voltages

Program Credit ("PC"):

Customers taking service under this Rider shall receive a monthly Program Credit which shall be calculated as follows:

PC = **RCL x (\$1.95) /kW/month**

Where:

RCL is the predetermined realizable curtailable load, which shall be calculated by the Company once per year for each customer by subtracting the customer's contract Firm Load from its Average Hourly Demand ("AHD"). For purposes of this Rider, the AHD shall be the customer's average kW load occurring during the non-holiday weekday hours of 11 a.m. to 5 p.m. Eastern Standard Time (equivalent to noon to 6 p.m. EDT) during the months of June through August, excluding actual hours of any Emergency Curtailment Events occurring during the preceding 12 month period. The RCL shall not exceed the amount of a customer's billing demand in excess of the contracted Firm Load on a monthly basis. The customer shall be provided written notice each year by the Company of the value of the RCL at least thirty (30) days in advance of the effective date of the RCL.

OTHER PROVISIONS:

A. Firm Load

For purposes of this Rider, "Firm Load" shall be that portion of a customer's electric load that is not subject to curtailment. A customer may request a reduction to its contract Firm Load no more than once in any twelve month period. The Firm Load may be reduced to the extent that such reduction is consistent with other terms and conditions set forth in this Rider. Any such change in Firm Load shall be applied beginning with the customer's January bill immediately following the year in which the change has been approved by the Company, provided that advance written request is provided to the Company no less than thirty (30) days prior to the effective billing month of the change. The Company may increase the Firm Load at any time if the Company, at its sole discretion, determines the Firm Load is at a level that the customer fails to demonstrate that they can reach. The Company shall promptly notify the customer of any such change.

B. Load Response Program Contract

Customers taking service under this optional rider shall execute the Company's standard Program contract which, among other things, will establish the Customer's Firm Load.

C. Metering

The customer must arrange for interval metering consistent with the Company's Miscellaneous Charges, Tariff Sheet 75.

RIDER OLR
Optional Load Response Program Rider

D. Emergency Curtailment Event

Upon no less than ten minutes advance notification provided by the Company, a customer taking service under this Rider must curtail all load above its Firm Load during an Emergency Curtailment Event consistent with the Company's instructions. For purposes of this Rider, an Emergency Curtailment Event shall be one in which the Company, a regional transmission organization and/or a transmission operator determines, in its respective sole discretion, that an emergency situation exists that may jeopardize the integrity of either the distribution or transmission system in the area.

During the entire period of an Emergency Curtailment Event, the customer's actual measured load must remain at or below its Firm Load with such load being measured every clock half hour. A customer's actual measured load shall be determined using the greater of the customer's highest lagging kVa or highest kW during the Emergency Curtailment Event.

If at any time during the Emergency Curtailment Event a customer's actual measured load exceeds its contract Firm Load, the Company may disconnect the customer from the transmission system for the duration of the Emergency Curtailment Event, at the customer's expense. The Company shall not be liable for any direct or indirect costs, losses, expenses, or other damages, special or otherwise, including, without limitation, lost profits that arise from such disconnection.

If at any time during the Emergency Curtailment Event a customer's actual measured load exceeds 110% of its Firm Load, the customer shall be subject to all four (4) of the following: (i) forfeit its Program Credit for the month in which the Emergency Curtailment Event occurred; (ii) pay the ECE Charge set forth in the Rates section of this Rider; (iii) pay the sum of all Program Credits received by the customer under the Program during the immediately preceding twelve billing months which shall include credits from this Rider; and (iv) the Company's right, at its sole discretion, to remove the customer from the Program for a minimum of 12 months.

If at any time during the Emergency Curtailment Event a customer's actual measured load is greater than 100% and less than or equal to 110% of its Firm Load during the Emergency Curtailment Event, the customer shall forfeit its Program Credit for the month in which the Emergency Curtailment Event occurred and shall pay the ECE Charge set forth in the Rates section of this Rider.

In the event of any conflict between the terms and conditions set forth in this Rider and other service reliability requirements and/or obligations of the Company, the latter shall prevail.

E. Notification

Customers served under this Rider shall be provided notification Emergency Curtailment Events by the Company. Customers shall be provided clock times of the beginning and ending of these events, except the Emergency Curtailment Event notification may be stated such that customers must curtail their actual measured load to its Firm Load in 10 minutes from the time the notification is issued. Receipt of curtailment notifications shall be the sole responsibility of the customer.

RIDER OLR
Optional Load Response Program Rider

Notification of an Emergency Curtailment Event consists of an electronic message issued by the Company to a device or devices such as telephone, facsimile, pager or email, selected and provided by the customer and approved by the Company. Two-way information capability shall be incorporated by the Company and the customer in order to provide confirmation of receipt of notification messages. Operation, maintenance and functionality of such communication devices selected by the customer shall be the sole responsibility of the customer.

F. Term

This Rider shall become effective for service rendered beginning June 1, 2009 and shall expire with service rendered through May 31, 2011.

A customer may terminate its participation in the Program upon no less than twelve (12) months advance written notice to the Company. Except as otherwise provided in this Rider, a qualifying customer may return to the Program at any time after a hiatus from the Program of at least one (1) year.

G. Conditions

Payment by the customer of all charges herein is a condition of service under this Optional Load Response Program Rider.

RIDER EDR
Economic Development Rider

a. Residential Non-Standard Credit Provision

APPLICABILITY:

Applicable to residential customers taking service under the Company's rate schedule RS to which the Company's Residential Distribution Credit Rider (RDC) applies. This Residential Non-Standard Credit Provision is not applied to customers during the period the customer takes electric generation service from a certified supplier.

RATE:

The following Residential Non-Standard credits are effective for service rendered beginning September 1, 2009, for all kWhs per kWh in excess of 500 kWhs per month which are consumed by the customer during the winter billing periods as defined in the Electric Service Regulations:

Customer rate schedule as of December 31, 2008

"Special Provisions" of Residential Standard Rate Schedule (Original Sheet No. 10)	(0.0000)¢
Residential Space Heating Rate (Original Sheet No. 11)	(1.9000)¢
Residential Optional Time-of-Day (Original Sheet No. 12)	(1.9000)¢
Residential Optional Controlled Service Rider (Original Sheet No. 14)	(1.9000)¢
Residential Load Management Rate (Original Sheet No. 17)	(1.9000)¢
Residential Water Heating Service (Original Sheet No. 18)	(0.0000)¢
Residential Optional Electrically Heated Apartment Rate (Original Sheet No. 19)	(1.9000)¢

b. Interruptible Credit Provision

APPLICABILITY:

Applicable to all customers who took service under the Company's interruptible tariffs set forth below as of February 1, 2008 and continue to take service under the Company's rate schedules GP, GSU, or GT in conjunction with the Company's Economic Load Response Program Rider (ELR). This Interruptible Credit Provision is not applied to customers during the period the customer takes electric generation service from a certified supplier.

Interruptible Electric Arc Furnace Rate	Original Sheet No. 29
Interruptible Rider – General Service Large and High Use Manufacturing	Original Sheet No. 73
Interruptible Rider – Metal Melting Load	Original Sheet No. 74
Interruptible Rider – Incremental Interruptible Service	Original Sheet No. 75

RATE:

The following interruptible credits will apply, by rate schedule, effective for service rendered beginning June 1, 2009 by unit of Curtailable Load, as defined in Rider ELR:

GP (per kW)	\$ (8.050)
GSU (per kW)	\$ (8.050)
GT (per kW)	\$ (8.050)

RIDER EDR
Economic Development Rider

c. Non Residential Credit Provision

APPLICABILITY:

Applicable to any customer taking service under the Company's rate schedules. This Non-Residential Credit Provision is not applied during the period a customer takes electric generation service from a certified supplier.

RATE:

The following credits will apply, by rate schedule, effective for service rendered beginning June 1, 2009, for all kWhs, per kWh:

STL	(3.9000)¢
TRF	(2.4000)¢

d. General Service - Transmission (Rate GT) Provision

APPLICABILITY:

Applicable to any customer taking service under the Company's General Service – Transmission (Rate GT). This provision is not avoidable for customers who take electric generation service from a certified supplier.

RATE:

The following charge will apply, effective for service rendered beginning June 1, 2009:

GT (per kVA of billing demand)	\$ 8.000
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The following credit will apply, effective for service rendered beginning June 1, 2009:

GT (all kWhs, per kWh)	(1.7884)¢
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ADDITIONAL PROVISION:

The charges provided for by Section (d) of this Rider shall be applied to the greater of (i) the measured monthly on-peak demand, or (ii) 25% of the measured monthly off-peak demand. Monthly on-peak demand is defined as the highest thirty (30) minute integrated kVA between the hours of 6:00 a.m. to 10:00 p.m. EST, Monday through Friday, excluding holidays. Holidays are defined as New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Monthly off-peak demand is defined as the highest thirty (30) minute integrated kVA for all other hours.

RIDER EDR
Economic Development Rider

e. Standard Charge Provision

APPLICABILITY:

Applicable to any customer that takes electric service under the Company's rate schedules. This Standard Charge Provision is not avoidable for customers who take electric generation service from a certified supplier.

PURPOSE:

The charges provided for by Section (e) of this Rider recover the difference in revenues resulting from the application of rates in the otherwise applicable rate schedule and the application of credits in sections (a), (b), (c), and (f) of this Rider.

RATE:

The following charges will apply, by rate schedule for all kWhs per kWh:

GS	0.6142¢
GP	0.4797¢

f. School Credit Provision

APPLICABILITY:

Applicable to any public school district building that either: 1) was served under the Company's Energy for Education II program on December 31, 2008, or 2) is a new public school district building in a school district served under the Company's Energy for Education II program on December 31, 2008 of which fifty-percent (50%) or more of the total square footage of such building is used for classroom-related purposes including any such building that is a mobile unit or temporary structure. This School Credit Provision is not applied to customers during the period the customer takes electric generation service from a certified supplier.

RATE:

All applicable charges specified in Company's Generation Service Rider (GEN) for General Service - Secondary ("Rate GS"), General Service Primary ("GP"), or General Service - Subtransmission ("GSU") rates, shall be reduced by 8.693 percent.

RIDER UPDATES:

The charges contained in this Rider shall be updated and reconciled on a quarterly basis. No later than December 1st, March 1st, June 1st and September 1st of each year, the Company will file with the PUCO a request for approval of the Rider charges which, unless otherwise ordered by the PUCO, shall become effective on a service rendered basis on January 1st, April 1st, July 1st and October 1st of each year, beginning October 1, 2009.

APPENDIX

QUALIFICATIONS OF

DENNIS W. GOINS

DENNIS W. GOINS

PRESENT POSITION

Economic Consultant, Potomac Management Group, Alexandria, VA

PREVIOUS POSITIONS

- Vice President, Hagler, Bailly & Company, Washington, DC
- Principal, Resource Consulting Group, Inc., Cambridge, MA
- Senior Associate, Resource Planning Associates, Inc., Cambridge, MA
- Economist, North Carolina Utilities Commission, Raleigh, NC

EDUCATION

College	Major	Degree
Wake Forest University	Economics	BA
North Carolina State University	Economics	ME
North Carolina State University	Economics	PhD

RELEVANT EXPERIENCE

Dr. Goins specializes in pricing, planning, and market structure issues affecting firms that buy and sell products in electricity and natural gas markets. He has extensive experience in evaluating competitive market conditions, analyzing power and fuel requirements, prices, market operations, and transactions, developing product pricing strategies, setting rates for energy-related products and services, and negotiating power supply and natural gas contracts for private and public entities. He has participated in more than 100 cases as an expert on competitive market issues, utility restructuring, power market planning and operations, utility mergers, rate design, cost of service, and management prudence before the Federal Energy Regulatory Commission, the General Accounting Office, the First Judicial District Court of Montana, the Circuit Court of Kanawha County, West Virginia, and regulatory commissions in Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Hawaii, Idaho, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, New Jersey, New York, North Carolina, Ohio, Oklahoma, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, and the District of Columbia. He has also prepared an expert report on behalf of the United States regarding pricing and contract issues in a case before the United States Court of Federal Claims.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing pleading was served upon the following parties of record or as a courtesy, via U.S. Mail postage prepaid, express mail, hand delivery, or electronic transmission on February 11th, 2010.

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This foregoing document was electronically filed with the Public Utilities

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Case No(s). 09-1947-EL-POR

Summary: Testimony Direct Testimony of Dr. Dennis W. Goins on Behalf of Nucor Steel Marion, Inc. electronically filed by Mr. Matt S White on behalf of Nucor Steel Marion, Inc.