

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Calpine Corporation, Dynegy Inc., Eastern)
Generation, LLC, Homer City Generation,)
L.P., NRG Power Marketing LLC, GenOn)
Energy Management, LLC, Carroll County)
Energy LLC, C.P. Crane LLC, Essential)
Power, LLC, Essential Power OPP, LLC,)
Essential Power Rock Springs, LLC,)
Lakewood Cogeneration, L.P., GDF SUEZ)
Energy Marketing NA, Inc., Oregon Clean)
Energy, LLC and Panda Power Generation)
Infrastructure Fund, LLC)
)
v.)
)
PJM Interconnection, L.L.C.,)

Docket No. EL16-49-000

**MOTION TO INTERVENE AND COMMENTS OF
THE NUCLEAR ENERGY INSTITUTE**

In accordance with Rules 212 and 214 of the Federal Energy Regulatory Commission (“Commission”) Rules of Practice and Procedure,¹ the Nuclear Energy Institute (“NEI”) moves to intervene in the above-captioned proceeding, and provides comments to the January 9, 2017 “Motion to Amend, and Amendment to, Complaint and Request for Expedited Action on Amended Complaint” (“Amended Complaint”), submitted by the Electric Power Supply Association (“EPSA”) and the Indicated Complainants (collectively, “EPSA Complainants”) in the above-captioned proceeding. For reasons explained more fully in these Comments, NEI requests that any Commission action in this proceeding ensure that all merchant nuclear units are paid fully in the wholesale power markets for their energy and capacity, in addition to any payments they receive for

¹ 18 C.F.R. §§ 385.212, .214 (2016).

zero-emission credits. Doing so would recognize the important benefits to Illinois specifically, and to the region more generally, of continued operation of nuclear units.

I. BACKGROUND

A. Commission Docket No. EL16-49-000

The Amended Complaint seeks to expand on a complaint that was originally submitted in this docket on March 21, 2016. The original complaint sought Commission-required modifications to the PJM Interconnection, L.L.C. (“PJM”) Minimum Offer Price Rule (“MOPR”) to address perceived threats to PJM’s capacity market from “State-approved subsidies.”² In response to Illinois’s recent legislation establishing, among other things, a “zero emission standard,” described by the EPSA Complainants as providing purported “out-of-market subsidies for favored existing resources in the PJM market,” the Amended Complaint seeks expedited action on the March 2016 complaint.³ Specifically, the Amended Complaint urges the Commission to direct changes to PJM’s Reliability Pricing Model (“RPM”) market that would impose expanded mitigation measures to be applied for the 2020/2021 Base Residual Auction (“BRA”) scheduled to be held in May 2017.⁴ The Amended Complaint alleges that such measures should ensure that “subsidized” existing resources are not allowed to artificially suppress clearing prices in the 2020/2021 BRA. The Amended Complaint also seeks longer-term relief for the 2021/2022 BRA.⁵

² Amended Complaint at 10.

³ *Id.* at 2.

⁴ *Id.* at 2-3.

⁵ *Id.*

B. Illinois ZECS Program

In December 2016, Illinois enacted a Zero-Emission Credit Standard (“ZECS”) as part of comprehensive energy legislation.⁶ The Illinois legislature was clear and thorough in explaining its rationale for establishing ZECS that it designed such that they would be paid for by Illinois consumers alone. As set forth in the Illinois legislation:

The General Assembly finds and declares:

- (1) Reducing emissions of carbon dioxide and other air pollutants, such as sulfur oxides, nitrogen oxides, and particulate matter, is critical to improving air quality in Illinois for Illinois residents.
- (2) Sulfur oxides, nitrogen oxides, and particulate emissions have significant adverse health effects on persons exposed to them, and carbon dioxide emissions result in climate change trends that could significantly adversely impact Illinois.
- (3) The existing renewable portfolio standard has been successful in promoting the growth of renewable energy generation to reduce air pollution in Illinois. However, to achieve its environmental goals, Illinois must expand its commitment to zero emission energy generation and value the environmental attributes of zero emission generation that currently falls outside the scope of the existing renewable portfolio standard, including, but not limited to, nuclear power.
- (4) Preserving existing zero emission energy generation and promoting new zero emission energy generation is vital to placing the State on a glide path to achieving its environmental goals and ensuring that air quality in Illinois continues to improve.⁷

The legislature goes on to further explain why nuclear power in Illinois should be preserved. It cites a published report issued jointly by a number of Illinois agencies, in which it

⁶ Illinois 99th General Assembly, S.B. 2814 (Dec. 7, 2016) (“Public Act 099-0906”), *available at* <http://www.ilga.gov/legislation/publicacts/99/PDF/099-0906.pdf>. A copy of Public Act 099-0906 was included as Attachment A to the Amended Complaint. The Governor of Illinois signed the ZECS legislation on December 7, 2016. *See* Office of the Governor, Press Release, Governor Signs Legislation to Protect Jobs, Ratepayers and Taxpayers (Dec. 7, 2016), *available at*

<https://www3.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=1&RecNum=13923>.
⁷ Public Act 099-0906 at Section 1.5.

was noted that analysis from PJM identified significant threats to reliability if the Illinois nuclear plants were to close. It further noted the report's conclusion "that nuclear power plants are among the most reliable sources of energy," with power available around the clock, and the report's suggestion of potential solutions to avoid the "associated dire consequences to the environment, electric reliability, and regional economy" that would result from premature closures of the Illinois nuclear power plants.⁸ The Illinois General Assembly concludes that:

it is necessary to establish and implement a zero emission standard, which will increase the State's reliance on zero emission energy through the procurement of zero emission credits from zero emission facilities, in order to achieve the State's environmental objectives and reduce the adverse impact of emitted air pollutants on the health and welfare of the State's citizens.⁹

Under the ZECS program, the Illinois Power Agency (a state agency) will execute contracts for zero emission credits from eligible facilities with 10-year terms beginning on June 1, 2017. Those eligible facilities will receive one credit for each megawatt-hour of energy produced. The state agency will purchase zero emission credits associated with up to 16 percent of electricity used in Illinois in 2014. Resources will be selected to provide the zero emissions credits based on public interest factors, including minimizing CO₂, SO_x, NO_x, and other pollutants and their impact on the environment.¹⁰

The Illinois legislation is designed to recover the money paid for zero emission credits the same way as consumers pay for renewable energy credits ("RECs"), which in Illinois is through a non-bypassable charge to all retail customers under the jurisdiction of Illinois regulators. The legislation also has consumer protections to limit the impact on retail rates. It caps the potential value of the credits based on the Social Cost of Carbon as determined by the

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.* at Section d-5.

U.S. Interagency Working Group. However, recognizing that the reason for valuing the zero-emission attributes is to preserve the benefits of zero-carbon energy for Illinois and to minimize the burden on Illinois consumers, the legislation has a mechanism to reduce payments under the ZECS program if and as the need for such payments is reduced because of increases in other revenue streams for those resources.

II. COMMUNICATIONS

The name and mailing address of the person to whom correspondence and communications concerning these Comments on behalf of NEI should be addressed is:

Ellen C. Ginsberg
Vice President, General Counsel and Secretary
Nuclear Energy Institute
1201 F Street, N.W., Suite 1100
Washington, D.C. 20004
Phone: 202-739-8140
Email: ecg@nei.org

III. DESCRIPTION OF NEI

NEI is the policy organization representing the commercial nuclear power industry. NEI's mission is to foster the beneficial uses of nuclear technology and to communicate accurate information about the importance of nuclear energy and technology. NEI is responsible for developing industry positions and advocating on legal, regulatory, and policy matters affecting the nuclear energy industry. NEI has more than 350 members, spread across 17 countries, and its membership includes all the companies licensed to operate commercial nuclear power plants in the United States, as well as nuclear plant designers, major architectural and engineering firms, entities that process nuclear fuel, and other organizations involved in the nuclear industry.

Consistent with its mission, NEI has worked actively to preserve existing nuclear generation as a key part of the nation's critical infrastructure. Nuclear plants are essential to

maintain a highly reliable electric grid, retain a diversified energy portfolio to manage inherent production cost risks, and substantially and sustainably reduce carbon emissions in the face of a growing economy. Numerous merchant nuclear plants have been prematurely and permanently retired, and numerous NEI members have indicated that they are considering shuttering their merchant nuclear facilities if revenues do not support the continued safe operation of those facilities. NEI has a strong interest in preventing further premature closures.

IV. MOTION TO INTERVENE

In its role representing the commercial nuclear power industry, NEI has a direct and substantial interest that could be affected by the outcome of this proceeding, and is entitled to intervene in accordance with Rule 214(b) of the Commission's Rules of Practice and Procedure.¹¹ The Amended Complaint raises facts and arguments that are especially relevant to the nuclear industry that could have a major impact on NEI and its members. NEI has a broad and unique perspective that should be considered by the Commission and cannot be adequately represented by any other party.

V. COMMENTS

NEI's overarching interest lies in ensuring that all attributes of nuclear power are fully and fairly recognized in revenues for merchant nuclear facilities. The current organized wholesale power markets recognize and pay for only a portion of this critical infrastructure's attributes, principally nuclear power's capacity and energy. For a variety of reasons, wholesale market payments for those attributes are depressed from prices that would exist in a fully competitive market. In creating its ZECS program, Illinois recognized that the highly desired attribute of zero-carbon emissions is not recognized in the PJM market and has decided it is in

¹¹ 18 C.F.R. § 385.214(b).

Illinois's interest to recognize and to have the state's consumers pay for that attribute separately to preserve that value for its citizens.

NEI agrees conceptually with the EPSA Complainants that wholesale market prices for capacity and energy should not be artificially suppressed in competitive organized markets, and supports solutions that ensure proper wholesale power prices to all resources. NEI, however, opposes any solution that would effectively deny nuclear power the same market prices for the capacity and energy it is delivering, regardless of whether it is receiving revenues for other attributes valued by Illinois. Accordingly, NEI urges that any relief ordered by the Commission in this proceeding not inhibit Illinois from exercising its authority to support the continued operation of its nuclear power plants by valuing and paying for environmental attributes that are not currently recognized in the wholesale power market.¹²

A. In the Absence of a Federal Solution, Illinois's ZECS Program is a Just and Reasonable Response to the Challenges Facing Illinois

The ZECS program is one of a handful of programs that the states have developed across the country to squarely address the demonstrable shortage of diverse, reliable zero-carbon energy that has resulted or will result from the premature and permanent shutdowns of merchant nuclear facilities. Under the prevailing conditions of competitive wholesale power markets, increasing numbers of nuclear facilities will be permanently lost without state initiatives like the Illinois ZECS program that value separately from the wholesale power market the unrecognized attributes of nuclear power.

The current state of the wholesale electric markets has resulted in the continued, permanent shutdown of merchant nuclear facilities, causing an immediate and permanent loss of

¹² The EPSA Complainants suggest that any preemption or jurisdictional issues presented by Illinois's actions are "not something the Commission need or should address here." Amended Complaint at 15 n.61, 11 n.46. Whether it agrees or disagrees with that suggestion, the Commission should not disrupt the exercise of the state's authority to further its legitimate interests through the ZECS program.

reliable, zero-carbon energy. Market distortions have led nuclear operators to prematurely shut down or announce plans to prematurely shut down more than 7,400 MWs of nuclear capacity.¹³ The resulting shortage in zero-carbon energy potentially imperils the future reliability of the nation's electric grid, and the ability of states and the country to meet existing carbon reduction commitments.

The challenge for merchant nuclear power is that, unless other revenue streams are created to recognize its many attributes, it must depend on energy and capacity market revenues to sustain ongoing operations. For merchant nuclear facilities in Illinois, no separate revenue stream or value is available in the organized wholesale power market to account for the round-the-clock, zero-carbon energy that they produce.

The inability to recover revenues for these special attributes is especially problematic within the competitive wholesale power markets, such as in the PJM market, where such units operate as "price takers." As price takers, merchant nuclear facilities must rely solely on market clearing prices in order to cover their substantial capital investment and the operating and maintenance costs required to maintain safe operations.

NEI has previously and consistently noted with concern that, in the capacity markets, clearing prices have been depressed by assured revenue streams paid to new generators entering the market, as well as by the proliferation of demand-response resources because of highly favorable Commission treatment of those resources. Similarly, NEI has noted the adverse

¹³ See Nuclear Energy Institute Comments on the Department of Energy's Quadrennial Energy Review (July 1, 2016) at 25 ("NEI QER Comments"). In addition to the closures and announced closures of Kewaunee, Vermont Yankee, Fort Calhoun, Pilgrim, and Diablo Canyon 1 and 2 noted in NEI's QER Comments, Entergy more recently announced plans to close Palisades, and Indian Point 2 and 3 for market-related reasons, which would be a loss of approximately 2800 MWs of nuclear capacity. See Entergy, NY Officials Agree on Indian Point Closure in 2020-2021: Decision Driven by Sustained Low Power Prices, available at <http://www.safesecurevital.com/entergy-ny-officials-agree-on-indian-point-closure-in-2020-2021>.

impact on nuclear generators in organized markets because of, for example, tax credits paid to certain generators that allow negative energy bidding, which has depressed energy revenues to those generators. Because nuclear units are wholly dependent on the clearing prices that they receive, how those clearing prices are established becomes critical.

While these clearing prices in years past may have been high enough so that nuclear power could withstand price suppression resulting from unvalued or under-valued attributes, that is no longer the case. More recently, revenues from energy and capacity alone have been insufficient to support continued operation of some merchant nuclear facilities. To allow merchant nuclear facilities in these circumstances to prematurely and permanently shut down is contrary to the public interest.

With each merchant nuclear facility that shuts down, the nation irrevocably loses a reliable source of baseload generation, as well as the stability of energy diversity and the many other societal benefits provided by nuclear power, including thousands of highly skilled and high paying jobs. With every closure, the reliability of the nation's electric grid becomes more vulnerable. A diverse portfolio of fuels and technologies—nuclear, coal, natural gas, hydro, non-hydro renewables, efficiency—is the core strength of the U.S. electric power supply system. This fuel and technology diversity serves as a hedge against price volatility and supply disruptions in any part of the portfolio. A 2014 analysis performed by IHS Energy demonstrated the value of fuel and technology diversity, finding that the current diversified portfolio of U.S. power supply *halves* the potential variability in monthly power bills compared to a less diverse supply.¹⁴ IHS Energy further found that moving to a system with a less diverse supply (*i.e.*, one without significant contributions from nuclear generation) would increase average wholesale

¹⁴ IHS Energy, The Value of US Power Supply Diversity (July 2014) at 5.

power prices by about 75 percent and retail power prices by about 25 percent, price impacts that would reduce U.S. GDP by nearly \$200 billion and lead to roughly one million fewer jobs.¹⁵

As the electric grid becomes increasingly reliant on natural gas, the reliability and fuel diversity offered by nuclear power becomes even more important. With each premature closure of a nuclear plant, the bulk power system becomes even more reliant on natural-gas fired generation to provide baseload supply and to backstop intermittent renewable resources. Natural gas is widely used outside the power sector, and the demand from other sectors—particularly coincident end-user gas peak demand during cold winter weather—critically affects both gas prices and the gas providers’ ability to deliver gas to the power sector, which mostly relies on interruptible transportation service to get its fuel. The abundance of natural gas resources aside, there are infrastructure constraints from time-to-time that increase the systemic risk of relying too heavily on natural gas. With the ever-increasing reliance on natural-gas-fired generation, any interruption in the immediate deliverability of natural gas can result in reduced energy generation and outages.

In short, states have recognized that the premature closing of productive nuclear facilities compromises fuel and technology diversity. That resulting reduction in diverse, round-the-clock production increases both the vulnerability of the electric grid to reliability risks and the price volatility experienced by consumers. As such, Illinois recognized that time is running out for nuclear power in the state. By making relief available to the state’s incumbent nuclear plants, the Illinois ZECS program preserves the benefits for Illinois that are not recognized in the PJM markets, but are being counted on by Illinois to achieve its environmental goals.

¹⁵ *Id.* at 5-6.

B. Illinois’s Pursuit of Legitimate Policy Objectives that Recognize Nuclear Power’s Zero-Carbon Attributes Should Not Be Disturbed by the Commission

Continued operation of nuclear units not only has reliability benefits, it provides environmental benefits as well. Nuclear power is the largest and most reliable source of zero-carbon energy in the country. The growing shortage of zero-carbon energy resulting from the shutdowns of such units will make it increasingly difficult, if not impossible, for Illinois to meet its near- and long-term carbon reduction goals. With each shuttered merchant nuclear plant, the chance to achieve future carbon reduction goals will become increasingly less likely and more expensive.¹⁶ While renewable power remains a critical solution to reducing carbon emissions, that solution is only partial. As a practical matter, renewable resources *cannot replace* the substantial lost zero-carbon energy now produced by nuclear resources. To replace a single 1000 MW nuclear facility would require more than 960 new state-of-the-art, 400-foot-tall wind turbines or, alternatively, 25 square miles of photovoltaic panels.¹⁷

To that end, it was entirely reasonable for Illinois to take the action that it did. Among the “legislative findings” that the Illinois legislature made in enacting the ZECS program were that: (1) the reduction of emissions of carbon dioxide and other pollutants “is critical to improving air quality in Illinois;” (2) the promotion of zero emission resources “is vital to placing the State on a glide path to achieving its environmental goals and ensuring that air quality in Illinois continues to improve;” and (3) the Social Cost of Carbon “is an appropriate valuation of the environmental benefits provided by zero emissions facilities, provided that the valuation is subject to a price adjustment that can reduce the price for zero emissions credits

¹⁶ NEI QER Comments at 23-26. The loss of Vermont Yankee alone in New England increased carbon emissions for the region by five percent.

¹⁷ See U.S. Nuclear Regulatory Commission, NUREG-1437, Supp. 49, Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Limerick Generating Station, Units 1 and 2, Final Report at 8-38, 8-44, 8-51 (Aug. 2014).

below the Social Cost of Carbon.”¹⁸ Aimed at addressing the state’s environmental objectives in light of the adverse impacts associated with air pollutants, the ZECS program is a legitimate means through which Illinois can achieve such environmental policy goals.

On the national level, all of the current utility-scale solar generation in the United States would need to be doubled just to replace the energy lost from the shutdown of a large two-unit nuclear station.¹⁹ Even with the dramatic and continued growth in wind and solar generation, by some projections, it will take another 25 years of such growth before those renewable resources, all combined, can produce as much energy as nuclear plants produce today. More to the point, states are counting on renewable energy to *reduce* carbon emissions going forward, a goal that becomes potentially *unachievable* if it instead is used to replace increasing amounts of nuclear power that are lost as units succumb to the current market distortions.

Illinois has its own separate and independent goals established under Illinois law, including goals for substantial reduction in carbon.²⁰ To this end, ZECS assign a monetary value to a class of generation resources that provide service attributes that are not currently recognized or compensated by the wholesale markets. Absent a Federal solution, state-sponsored environmental initiatives, such as the Illinois ZECS program, are essential. These programs are akin to state-established REC markets, which the Commission has previously recognized can lawfully coexist with the organized wholesale markets.²¹ The State’s ZECS program was designed purposely to mimic the REC programs that Illinois and other states have adopted.

¹⁸ Public Act 099-0906 at Section 1.5.

¹⁹ See *Wake-up Call, Improving the Economics of America’s Nuclear Reactors*, Comments as Written by Marvin S. Fertel, available at <http://www.nei.org/News-Media/Speeches/Wake-Up-Call,-Improving-the-Economics-of-America-s>.

²⁰ See Public Act 099-0906 at Section 1.5.

²¹ See, e.g., *WSPP*, 139 FERC ¶ 61,061 at P 21 (2012) (“RECs are state-created and state-issued instruments certifying that electric energy was generated pursuant to certain requirements and standards. Thus, a REC does not constitute the transmission of electric energy in interstate commerce or the sale of

C. Merchant Nuclear Plants in Illinois Should Receive the Full Clearing Prices for the Energy Produced and Capacity Provided, in Addition to Any Payments They Receive for ZECS

NEI opposes any solution in this proceeding that would not permit merchant nuclear plants in Illinois to receive for their energy and capacity the full clearing prices that all other resources receive in the competitive PJM market. The revenue stream established by Illinois's ZECS program is for a separate attribute of nuclear power that is not recognized in the wholesale power market, is valuable to Illinois, and for which Illinois has determined should be paid by Illinois consumers. NEI would welcome market changes that would assure fair and equitable capacity and energy clearing prices for *all* resources, including nuclear power. NEI, however, urges the Commission to reject proposals that would deny payments to operating merchant nuclear plants for their energy and capacity at the full clearing prices paid to all other resources. These payments for energy and capacity should be without regard to whether Illinois separately values and pays for attributes like zero emissions.

electric energy at wholesale in interstate commerce"). Dozens of states and the District of Columbia have established programs that value a resource's environmental attributes and that direct the purchase of such attributes unbundled from any wholesale power sale. Illinois's ZECS program is no different.

VI. CONCLUSION

For the reasons set forth above, NEI respectfully requests that the Commission (1) grant its motion to intervene in the above-captioned docket, (2) accept these Comments, and (3) ensure that all merchant nuclear units are paid fully in the wholesale power markets for their energy and capacity, in addition to any payments they receive for zero emission credits.

Respectfully submitted,

Nuclear Energy Institute

By: /s/ Ellen C. Ginsberg
Ellen C. Ginsberg
Vice President, General Counsel
and Secretary
Nuclear Energy Institute
1201 F Street, N.W., Suite 1100
Washington, D.C. 20004
Phone: 202-739-8140
Email: ecg@nei.org

January 30, 2017

CERTIFICATE OF SERVICE

I certify that I have this day served the foregoing document on all parties listed on the official service list in the above-captioned proceeding.

Dated at Washington, D.C., this 30th day of January, 2017.

/s/ Jonathan M. Rund
Jonathan M. Rund
Associate General Counsel
Nuclear Energy Institute
1201 F Street, N.W., Suite 1100
Washington, D.C. 20004
Phone: 202-739-8144
Email: jmr@nei.org