UNITED STATES OF AMERICA
BEFORE THE
ENVIRONMENTAL PROTECTION AGENCY

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines	)	Docket No. EPA–HQ–OAR–2008–0708

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM ("Market Monitor"),[1] submits these comments on the amendments to the national emission standards for hazardous air pollutants ("NESHAP") for stationary reciprocating internal combustion engines ("RICE") under section 112 of the Clean Air Act that the Agency proposed on May 22, 2012.[2] The proposed amendments would allow owners and operators of emergency stationary internal combustion engines to operate those engines in

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1 PJM Interconnection, L.L.C. is a Regional Transmission Organization ("RTO"), as described in the rules of the Federal Energy Regulatory Commission (FERC). 18 CFR Part 35 Subpart F. PJM operates a centrally dispatched, competitive wholesale electric power market that, as of September 30, 2011, had installed generating capacity of 179,572 megawatts (MW) and more than 750 market buyers, sellers and traders of electricity. PJM operates in a region including more than 58 million people in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. The Market Monitor performs the market monitoring function that FERC rules require for RTOs. 18 CFR § 35.34(j)(6). Market Monitoring consists of three core functions: reporting on market performance, monitoring the behavior of market participants and the RTO, and participating in market design. *Id*. The Market Monitor is required to provide independent and objective analysis

2 *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines*, Proposed Rule, EPA Docket No. EPA-HQ-OAR-2008-0708, 77 Fed. Reg. 33812 (June 7, 2012) ("Proposed Rule").

certain emergency conditions, as part of an emergency demand response program, for up to 100 hours per year.[3] The current rule permits 15 hours.[4] There is no market-based or reliability-based policy rationale that supports the revised run time exemption.

The EPA has determined that regulation of RICE generators is needed to protect the environment. The role of RICE generators in wholesale power markets provides no reason to alter this determination. Rather, allowing additional run time for RICE generators would permit RICE generators to displace conservation-based demand side resources.

Some have asserted that an exemption for RICE generators participating in demand-side response ("DSR") programs provides benefits to the organized wholesale electricity markets.[5] Those arguments have no merit. On the contrary, providing the exemption will have negative consequences for efficiency and reliability. The exemption would create harmful incentives and aggravate the impact of design flaws in the wholesale electricity markets. The exemption conflicts with and would undermine the development of the demand side of these markets.

The assertion that the exemption is required in order to support grid reliability is entirely without support. PJM obtains resources adequate to meet load plus a reserve margin through the RPM auction process. Resource adequacy is the central objective of the PJM capacity market.[6] Demand side response resources, which are termed "DR" in the

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3 Proposed Rule at 33817.

4 40 CFR § 63.6640(f)(1)(iii).

5 Proposed Rule at 33816—33819.

6 "RPM" stands for "Reliability Pricing Model." RPM is a centrally administered "capacity market" through which, in auctions for each Delivery Year (June 1–May 31), PJM obtains resources of all

capacity market, are offered into the RPM auctions and clear. As a result, DR contributes to reliability, with the caveats associated with Limited DR. But there is no link whatsoever between DR that clears in a forward RPM auction and the need to use diesels without environmental controls to meet those commitments. Existing commitments made in auctions covering Delivery Years through May 31, 2016, have been undertaken with the knowledge of the existing environmental regulations. Clean conservation-based DR provides all the same reliability benefits as diesels without the environmental costs. All DR resources that clear in RPM auctions are termed "Emergency DR." But that name does not mean that these resources play some unique role in meeting emergencies on the PJM grid. In fact, DR resources in the RPM auctions are economic resources like the generation with which they compete. All PJM capacity resources are needed during emergencies, when demand is high relative to supply. This fact does not demarcate diesel generators as having a special role.

PJM markets have responded quickly and flexibly to other environmental regulations with more far reaching consequences than the RICE NESHAP rules. PJM's coal fleet is being reshaped currently to be consistent with environmental regulations without permanent exceptions based on reliability needs. The MW of affected coal units are substantially greater than the MW of DR affected by the RICE NESHAP rules. The PJM markets can respond successfully without any special exemption for uncontrolled diesels.

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types. These "capacity" resources are all needed to meet demand throughout the year at a MW level determined on the basis of forecast peak demand.

Because the proposed exemption serves no useful purpose and will have harmful effects, there is no reason why the same run time rule should not apply to RICE generators regardless of how they choose to participate in the markets or where they interconnect to the electric grid. Accordingly, the proposed run time exemption of 100 hours should be rejected.

I. COMMENTS

A. The Proposed Exemption for RICE Generators Participating in Demand Side Programs Means Displacing Capacity and Energy from Cleaner Alternatives.

The purpose of the NESHAP RICE rule is to protect and promote clean air. The Agency has specified a level of emissions needed to achieve its policy goals. The role of RICE generators in wholesale power markets provides no reason to alter this determination.

RICE generator-based DR displaces conservation-based DR in the capacity markets and in the energy markets. RICE generator-based DR also displaces more efficient generation to the extent that Limited DR displaces generation resources. The resources that clear in the capacity market determine the resources that will be available to provide energy on high demand days.

A 100-hour exemption is not needed to avoid harmful interference in the operation of environmentally beneficial programs in the wholesale power market. Because DSR programs are usually associated with conservation and efficiency, the nature of RICE generators' participation in DSR programs can be misunderstood. Customers participating in DR programs based on RICE generators use these behind-the-meter generators to offset the demand at their location during peak hours, so that the metered demand (load) appears to be reduced. Customers do not actually use less power when they rely on these engines,

rather, they substitute behind-the-meter diesel engines for the MW they would otherwise need to buy from the wholesale power grid. When customers use energy from diesel engines with no environmental controls, those customers use less efficient and more polluting sources of energy than they would if they purchased from the wholesale power grid.

RICE generators would typically be called to operate as DR by the organized wholesale market during high load hours, generally during hot days.[7] Base load units, typically coal and nuclear, operate year round, on and off peak. RICE generators are not competitive with coal when economically dispatched and therefore RICE generators will not displace coal-fired generating units in energy markets. RICE generators may displace other resources that generally operate only during peak hours. Such resources include natural gas-fired combustion turbines and conservation-based DR. These are the resources that would likely be displaced both in the energy market and in the capacity market by an increase in RICE generator-based DR.[8]

Affording such uses a special benefit through an exception to pollution rules would simply mean an increase in pollution compared to the alternative, with no positive benefits on markets. This is plainly not consistent with the Agency's objectives. There is nothing in the functioning of PJM markets that requires the Agency to modify its objectives with respect to RICE units.

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[7] These are also known as "high energy demand days" or "HEDD." States in the PJM region have raised concerns about the effects of units that operate on these particular days, regardless of annual run time. New Jersey has enacted strict regulations for generators that operate on HEDD.

[8] *See* Northeast States for Coordinated Air Use Management (NESCAUM), "Air Quality, Electricity, and Back-up Stationary Diesel Engines in the Northeast (August 1, 2012).

B. Special Run Time Exemptions that Promote the Participation of RICE Generators in DR Programs Displace Participation in Those Programs by Conservation-Based DR and Exacerbate Pricing Inefficiencies and Reliability Problems Created Under the Current Rules.

The organized power markets include rules that accord preferences to DR over generation resources. The rules do not require, MW for MW, the same level of performance from DR that they do from generation resources even though DR resources receive either the same or superior compensation to generation resources. One example of these preferences is the Limited DR capacity product included in the PJM market rules. Limited DR is required to respond only up to a maximum of 60 hours per year while generation is required to respond all 8,760 hours of the year if needed (less scheduled maintenance).

The Market Monitor has recommended the elimination of Limited DR from the capacity market because it is an inferior product which distorts capacity prices. PJM has implemented a preferable Annual DR product, and has placed a cap on procurement of the Limited DR capacity product due to PJM concerns about reliability.[9] [10]

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[9] *PJM Interconnection, L.L.C.*, 134 FERC ¶61,066 (2011).

[10] *See Id.* at PP 2–4 ("Under the Reliability Pricing Model (RPM) rules, PJM conducts forward auctions to secure capacity for a future delivery year, thereby allowing both existing and proposed generation, demand response and energy efficiency resources to compete to meet the region's installed capacity needs. PJM provides for demand resources to be offered into the auction in competition with generation and energy efficiency resources.[footnote omitted] These demand resources must reduce load subsequent to a request for load reduction from PJM following the declaration of a Maximum Emergency Generation action, unless the resource has already reduced load pursuant to PJM's economic load response program.[footnote omitted] The level of demand resources committed to PJM has grown with the implementation of RPM.[footnote omitted] Under the current RPM rules, demand resources can qualify for the RPM provided they: []can be interrupted during the hours of 12:00 p.m. to 8:00 p.m. (Eastern Prevailing Time) on non-Holiday weekdays during the months of June through September; []can be called upon for interruptions up to ten times during that period each year; and []can remain interrupted for up to six hours when called upon. PJM contends that as more megawatts of resources that are only available during narrowly defined peak periods are committed, fewer megawatts of more broadly available

The goal of increasing participation by customers in DSR programs has been the policy rationale for providing preferential terms for capacity from DR over other resources. Special incentives may overcome the reluctance of customers to invest in the DSR equipment and to change their operational behavior in order to become more efficient or tolerate reductions or interruptions to provide conservation-based DR. But from an administrative standpoint, it is difficult to distinguish increased output behind the meter from reduced consumption behind the meter. This is not a reason to conclude that policy preferences for DSR, reflected in PJM's Limited DR product, are meant to extend the same preferences to behind-the-meter generation.

Allowing an exemption in the NESHAP RICE rule for RICE generators located behind the meter impedes or delays its replacement by cleaner alternatives.[11,12] Such a preference would have the unintended consequence of providing incentives to displace clean conservation-based DR with uncontrolled diesel generation.

In fact, in the capacity market, RICE generators used to support Limited DR displace only conservation-based Limited DR. When a generation resource is offered in RPM auctions, there must be a specific, identified generating unit that is offered. That is not true

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resources are committed. As a result, PJM raises a concern that commitment of fewer resources that are more broadly available increases the risk that PJM may have to call on a resource at a time, or in a manner, in which the resource is not required to respond."); *see also* PJM Resource Adequacy Planning Department, Demand Resource Saturation Analysis at 15 (May 2010) ("Given the current interruption requirements applicable to DR, these study results indicate that the reliability value of DR saturates at an 8.5% penetration level for the RTO."), which can be accessed at: <*http://www.pjm.com/~/media/committees-groups/committees/pc/20100811/20100811-item-10-demand-response-saturation-report.ashx*>.

11 See *2011 State of the Market Report for PJM* at 158.

12 Monitoring Analytics, LLC, can be found on the web at <*http://www.monitoringanalytics.com*>.

for DR offers in the capacity markets. In the case of DR, the actual resources which will support the offer can be identified just prior to the actual Delivery Year. The result is that a change in incentives like that contemplated by the Agency in this matter can have a very significant impact on the actual DR resources used to support the Limited DR that has been sold through the 2015/2016 Delivery Year. If RICE resources are made more attractive, there will be a substantial incentive for CSPs to use RICE resources instead of conservation-based DR to meet their Limited DR obligations. The most important and harmful effect of the proposed increase in allowed RICE generator run hours would be the displacement of conservation-based DR in capacity markets.

The effective cap on Limited DR has been hit in every RPM auction since it was imposed. Because Limited DR is less expensive to provide than Annual DR and generation but receives the same capacity price, this is expected to continue for as long as PJM rules permit Limited DR. Conservation-based DR is often more expensive to provide than RICE generator-based DR. The reason is that the user of energy, which is the provider of the conservation-based DR, must change its behavior in significant ways in order to respond to PJM calls.

In the absence of special incentives for RICE based DR, conservation-based DR could provide the full amount of Limited DR. Thus, RICE generator-based DR directly displaces conservation-based DR. With a 100 hour limit, RICE based DR can compete most effectively as Limited DR. RICE generator-based DR can directly displace Limited DR, but a CSP would have to use a portfolio of RICE resources in order to provide Annual DR. This would mean a significant increase in cost compared to providing Limited DR and makes such offers unlikely. Conservation-based DR, rather than fossil-fuel fired generation, will be displaced by RICE generators.

In PJM's three-year-forward RPM Auctions, DR, mostly offered by CSPs, has claimed a significant and growing portion of the PJM's capacity requirements for future years. Table 1, from the 2011 State of the Market Report for PJM,[13] illustrates this growth.

Table 1 RPM load management cleared capacity and ILR: 2007/2008 through 2014/2015

	DR Cleared		EE Cleared		ILR	
Delivery Year	ICAP (MW)	UCAP (MW)	ICAP (MW)	UCAP (MW)	ICAP (MW)	UCAP (MW)
2007/2008	123.5	127.6	0.0	0.0	1,584.6	1,636.3
2008/2009	540.9	559.4	0.0	0.0	3,488.5	3,608.1
2009/2010	864.5	892.9	0.0	0.0	6,273.8	6,481.5
2010/2011	930.9	962.9	0.0	0.0	7,961.3	8,236.4
2011/2012	1,766.0	1,826.6	74.0	76.4	8,730.7	9,032.6
2012/2013	7,487.9	7,732.9	567.5	585.6	0.0	0.0
2013/2014	9,487.2	9,802.4	726.3	748.6	0.0	0.0
2014/2015	13,663.8	14,118.4	796.9	822.1	0.0	0.0

As CSPs determine how to meet these DR obligations as each of these Delivery Years approach, they will acquire a portfolio of customers who are willing to make the investments necessary to reduce their loads through conservation, efficiency or load management or customers who are willing to invest in RICE based generation on site. Allowing additional run time for RICE generators provides a strong incentive for CSPs to include a greater proportion of these environmentally uncontrolled and inefficient resources. Leaving the exemption at the 15 hour level would provide an incentive to CSPs to meet a greater proportion of their DSR obligations through conservation-based DSR.

The choice of DR technologies should remain an economic choice, one that reflects all of the associated costs and benefits. RICE generators should participate in the wholesale power markets based on their full costs without attributing any special status to them when they are used to support participation in DSR programs.

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13 *2011 State of the Market Report for PJM,* (Table 4-11) at 100.

C. A Longer Run Hour Exemption is Not Needed to Permit RICE Generators to Participate in DR Programs.

The Market Monitor does not agree that a run hour exemption is justified on market or reliability grounds for RICE generators that participate in DR programs.

The Proposed Rule states:

> The 100 hours per year allowance would ensure that a sufficient number of hours are permitted for engines to meet independent system operator (ISO) and regional transmission organization (RTO) tariffs and other requirements for participating in various emergency demand response programs and would assist in stabilizing the grid, preventing electrical blackouts and supporting local electric system reliability.[14]

The assertion that the exemption is required in order to support grid reliability is entirely without support. PJM obtains resources adequate to meet load plus a reserve margin through the RPM auction process. DR is offered into the auctions and clears. As a result, DR contributes to reliability, with the caveats associated with Limited DR. But there is no necessary link whatsoever between DR that clears in a forward RPM auction and the need to use diesels without environmental controls to meet those commitments. Existing DR commitments have been undertaken with the knowledge of the existing environmental regulations. Clean conservation-based DR provides all the same reliability benefits without the environmental costs.

The assumption that an additional allowance of run time is necessary to permit participation in RTOs' DR programs is incorrect. This statement applies only to a resource attempting to participate in the market on a standalone basis. Standalone participation is

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[14] Proposed Rule at 33813.

not the only way to participate or even the typical way to participate. DR participation in RTO capacity markets usually occurs through a portfolio of assets aggregated and managed by a CSP.

In a resource portfolio, RICE generators subject to a 15-hour run time restriction can be combined with other RICE generators to serve as the basis for a unit of DSR based capacity. Such a portfolio approach would appropriately have the CSP bear the associated costs and risks.

The run time specified by the EPA would affect the number of resources needed by CSPs to create each unit of Limited DR. A shorter run time would appropriately affect the cost of providing DR from RICE resources. Either the diesels must have environmental controls added or the diesels must observe the run time limits.

II. CONCLUSION

The proposed run time exemptions are not required by any aspect of competitive wholesale electricity markets. The proposed exemptions would result in the displacement of conservation-based demand side resources and negatively affect wholesale power markets, in exchange for weakened emissions limits. Accordingly, the proposed 100-hour run time exemption should be rejected.

The Market Monitor respectfully requests that the Agency afford due consideration to these comments as the Agency resolves the issues raised in this proceeding.

Respectfully submitted,

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