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VIA ELECTRONIC FILING

Carmen D. Diaz, Acting Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor, Suite 314
P.O. Box 350
Trenton, New Jersey 08625-0350

**Re: Draft Minimum Filing Requirements on Advanced Metering Infrastructure
(AMI) Data Transparency, Privacy & Billing, Docket No. EO20110716**

Dear Acting Secretary Diaz:

Jersey Central Power & Light Company (“JCP&L” or the “Company”) is pleased to submit comments on the Draft Minimum Filing Requirements on Advanced Metering Infrastructure (“AMI”) Data Transparency, Privacy & Billing (“Draft MFRs” or “MFRs”) dated July 29, 2022 in the above-referenced matter. The Staff (“Staff”) of the New Jersey Board of Public Utilities (“Board” or “BPU”) issued Draft MFRs which outline eleven topics for utility data access plans (“DAPs”).¹ Staff now seeks “comment on these recommended MFRs”.²

The Company appreciates the hard work that Staff has done to develop these MFRs and understands the difficulty of balancing the sometimes-competing interests of customer privacy, beneficial third-party access, and cost. JCP&L encourages Staff to consider the availability of technology, the technical feasibility and compatibility with Board-approved AMI Plans, the costs to implement, and stranded cost recovery before mandating and/or the implementation of the MFRs. JCP&L would also seek prioritization of these MFRs along with appropriate regulatory treatment of cost recovery for any new technology required to meet the MFRs.

¹ Draft Minimum Filing Requirements at 4, 6. The eleven topics identified in the Draft Minimum Filing Requirements are: (1) Customer Ownership and Sharing of Energy Related Data; (2) AMI Data Provision Timelines; (3) Adoption of Standardized Customer Privacy and Cybersecurity Requirements; (4) Reporting Metrics; (5) Data Granularity and Appropriate Rollout Schedule; (6) Additional Data Fields; (7) Ensuring Fair Access and Competition; (8) Billing and Settlements; (9) Format of Data Sharing; (10) Emergency Responder Access; and (11) Appropriate Utility Use of AMI Data.

² *Id.* at 4.

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JCP&L’s Board-approved AMI Plan provides many new capabilities and benefits. However, the suggested requirements in these MFRs are beyond the scope of what was contemplated by and approved in the Company's AMI Plan. For example, JCP&L’s Board-approved AMI Plan, including estimated cost, does not address all the capabilities necessary to implement all functionality contemplated in these MFRs. To the extent the Board imposes requirements beyond the Company’s Board-approved AMI Plan, the Company should be permitted to defer and recover these incremental implementation costs in the same manner as provided in its approved Stipulation of Settlement.

As detailed in JCP&L’s comments to the Straw Proposal filed in this proceeding before the issuance of the Draft MFRs, the Company believes that many issues pertaining to the development of data access plans across New Jersey required to meet the MFRs will require much more detailed discussions by stakeholders and further developments before the Company believes significant modifications to its Board-approved AMI Plan should be made. Instead, JCP&L believes various technical working groups should be considered to further develop and clarify the need for and steps to be taken to implement the proposed requirements prior to codifying the minimum filing requirements (“MFR”) in an order or rule. To the extent these recommendations are adopted, any requirements for statewide standardized DAPs should embody the concept of electric distribution companies (“EDC”)-specific flexibility to reflect the differences between different EDCs, including different AMI Plans, with different implementation schedules, with different technical features, as well as different service territories. Moreover, the Board should provide for the EDCs to receive full and timely recovery of their costs associated with the implementation of related system enhancements.

Although the Company believes that many of the recommendations in the Draft MFRs should be further developed and not implemented until they have been vetted as part of a broader stakeholder process, JCP&L has provided its comments on each of the eleven recommendations herein. Note that these comments incorporate by reference extensive portions of the Company’s Comments in response to the Straw Proposal which were submitted on October 7, 2021, and which positions remain relevant at this time. Before detailing those comments, however, JCP&L further notes that recommendations in the Draft MFRs will require significant investment be made by the State’s EDCs.

JCP&L’s Responsive Comments on the Eleven Topics

Recommended MFRs:

Staff recommends the following MFRs for inclusion within the EDCs’ Data Access Plans. Appendix 1 to this attachment provides details on the benefits of each proposed MFR. Appendix 2 to this attachment provides definitions of terms used in this attachment. The MFRs propose to require utilities to file with the Board a report on its use of AMI data to achieve these benefits at intervals no longer than every 18 months.

AMI Use Cases

In setting forth the following MFRs, Staff hopes to enable a number of use cases designed to provide energy consumers with the ability and incentive to engage with their energy usage and select options that reduce energy consumption, or shift that consumption to times of day that alleviate strain on the electric grid.

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For customers, these use cases include:

- Allow sharing of instantaneous usage and demand measurements on a near real-time basis, at watt-level precision;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding instantaneous usage and demand measurements.

- Allow customers to be notified about pre-defined bill or usage thresholds, demand, and voluntary conservation requests;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding High bill notification and Voluntary Conservation Notification.

- Enable customers to select between available rate plans and to understand how and when their own generation is exporting to the grid;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding Alternate Rate Structures and Generation Export.

- Enable customers with DERs to fully participate in DER aggregations envisioned by FERC Order 2222, including providing appropriate data access and availability for approved two-way metering and telemetry requirements; and

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding ability for customers with DERs to fully participate in DER aggregations envisioned by FERC Order 2222, including providing appropriate data access and availability for approved two-way metering and telemetry requirements.

- Provide the complete data set for operation of a Managed Electric Vehicle (“EV”) Charging application.

JCP&L Comment: JCP&L does not currently have a "Managed Electric Vehicle Charging Application". Moreover, the MFRs did not define what is meant by "complete data set" and therefore JCP&L is unable to comment at this time. Upon receipt of additional information, JCP&L would be happy to comment.

For utilities, these AMI use cases include:

- Utilize AMI to measurably improve the reliability of utilities by increasing system and customer transparency, improving efficiency of distribution system planning, and accelerating outage recovery;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 4 regarding Distribution Planning.

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- Rapidly isolate and immediately notify the utility of the outage on a distribution system segment;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 4 regarding Outage Determination.

- Remotely connect, disconnect, and reconnect certain meters in emergencies and allow the rest of the critical infrastructure on the feeder to remain powered on during the emergency;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 4 regarding Aid in Emergency Operations. Further, JCP&L’s remote disconnect/reconnect functionality is only available on single phase meters installed on most residential and some small commercial premises, but not on all meters to be deployed under the Company’s Board-approved AMI Plan.

- Enable the use of information gleaned from AMI to assist customers and third parties to propose and site DERs at the most valuable place on the distribution grid;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding Distribution Planning as it relates to “Allow the use of information gleaned from AMI to assist customers and third parties to propose and site DERs at the most valuable place on the distribution grid”.

- Promote system visibility for customers and third party developers through enabling real-time power flow mapping from the feeder to the customer meter in a way that would update on real-time conditions, forecast load and voltage at primary and secondary nodes and meters, and monitor the voltage, power quality, frequency, and other measurements of the grid conditions in real time;

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding Distribution Planning as it relates to “Promote system visibility for customers and third-party developers through enabling real-time power flow mapping from the feeder to the customer meter”.

- Allow the consideration of non-wire alternatives and potentially informing a local pricing component that may be used in future market-based mechanisms to best capitalize on the value for DER services provided to the local distribution circuit; and

JCP&L Comment: Please refer to the Company’s Comment in response to Straw Proposal, Topic 3 regarding Distribution Planning as it relates to “allow the consideration of non-wire alternatives and potentially informing a local pricing component that may be used in future market-based mechanisms to best capitalize on the value for DER services provided to the local distribution circuit”.

- Collect information that may inform future integrated DER planning, including:

- o Identifying locations on the grid which could utilize retail-level load management to avoid or defer the capital expense of upgrading a circuit;
- o Forecasting overloads on future circuits based on granular usage trends;
- o Determining whether deployment of DER resources could more efficiently alleviate identified violations; and
- o Facilitating improvements to the current interconnection process. The Company's comments on the specific proposals under the eleven topics are set forth below.³

JCP&L Comment: Please refer to the Company's Comment in response to Straw Proposal, Topic 4 regarding Distribution Planning.

1. Customer Ownership and Sharing of Energy Related Data.

Staff recommends that each EDC adopt a clear, unambiguous statement in its Data Access Plan that usage and demand data generated by AMI meters belong to the customer whose usage is captured by the AMI meter and that such data should be easily accessible with "one click" access and sharing ability, as discussed below. Customers should also have the right to move their energy-related data from one energy services provider to another, a concept known as "data portability." Furthermore, Staff recommends, as discussed below, that all EDCs use the Green Button Connect ("GBC") to allow the seamless sharing of data with customers through the GBC. EDCs should provide customers the ability to share data with authorized third parties through a variety of formats, including GBC, Electronic Data Interchange ("EDI") or through the EDCs' supplier web portals via flat files (i.e., "batch CSV" or Tab-delimited files). Staff's opinion is that this MFR will ensure that customers maintain complete control over sharing of all individually generated interval usage and related AMI data.

JCP&L Comment: Preliminary, the Company refers to its Comment in response to Straw Proposal, Topic 1 regarding Access to Data and Data Sharing.

Under JCP&L's Board-approved AMI Plan, which is currently in the process of implementation, Green Button "Download" format is currently available on the FirstEnergy ("FE") Customer Portal for those customers that establish an account ("My Account"). Customers have the ability to view and download interval data into XML or CSV file formats on a rolling basis as smart meters are deployed and certified across the service territory. This capability is enabled through third party providers with integrated web-pages behind My Account for a seamless web experience. JCP&L's approved plan also accommodates customer-owned Home Area Network (HAN) devices.

While Green Button "Download" is currently available under JCP&L's Board-approved AMI Plan, Green Button Connect ("GBC") would be an enhancement envisioned on the Customer Portal behind My Account, in addition to Green Button Download. This will require revision to the third party provider contracts and appropriate design/build by all parties. Similarly, multi-factor authorization ("MFA") and "bad actor" tracking will require additional technology build and processes by JCP&L and/or its portal vendors. This may result in significant additional implementation costs not included nor accounted for in the Board-approved Plan. Moreover, an overly broad general requirement that the EDCs maintain a "bad actor" list, absent specifics, is unclear as to whether EDC(s) are responsible for the tracking, maintaining, and reporting of the acts

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of third-party entities banned

from participation in AMI data sharing. This issue should be discussed in a working group. JCP&L supports the use of a working group to specify the method for tracking bad actors and appropriate data sharing restrictions.

The release of customer data is performed pursuant to BPU Rules and Regulations pertaining to those third parties licensed by the BPU, or as authorized by the customer for release of data to non-licensed third parties. “Licensed” third parties are provided interval data via existing Electronic Data Interchange (“EDI”) and Supplier Portal. JCP&L’s Board-approved AMI Plan includes SU-MR, StS-HIU, and StS-Rolling 10-day Supplier Portal functionality for licensed Third Party Suppliers (“TPSs”), which is similar to current data access mechanisms employed by JCP&L’s sister companies in Ohio and Pennsylvania. Further enhancements will be required to convert Supplier Portal StS-Rolling 10-day to a Rolling 14-day. Non-Licensed third parties obtain data from the Utility with a legacy Letter of Authorization signed by the customer, or directly from the customer via customer-owned HAN devices or customer-provided Green Button Downloads as approved in the JCP&L AMI Plan. Given the volume of requests anticipated to be received because of the plethora of use cases for the data capable of being obtained through AMI, JCP&L encourages the Board to evaluate its statutory and regulatory authority to put the onus on receiving and confirming customer consent on the third parties requesting the customer data and to seek legislative changes, if necessary, to permit such a construct.

2. AMI Data Provision Timelines.

Staff recommends that validated AMI data be made available to customers or their authorized agents no later than 48 hours after the meter readings are captured. Staff originally recommended in its Straw Proposal that all data be made available “no later than 24 hours after the meter readings are captured.” However, several EDCs expressed concerns about this MFR due to the timeframe required for data validation. Specifically, JCP&L stated that the 24 hour-timeframe would be too short, but that a 48 hour-timeframe would be sufficient. Additionally, ACE proposed that data be made available the afternoon of the following day. PSE&G stated that it performs validation of its AMI data on a day-following basis (i.e., on the morning of day two PSE&G performs a validation of the AMI data for day one), which would make it impossible for PSE&G to adhere to the 24 hour-timeframe. For these reasons, Staff believes that it is appropriate for validated AMI data to be made available within 48 hours after the meter readings are captured.

Staff recommends that unvalidated AMI data be shareable with home area networks where feasible (i.e. single-tenant customers without range constraints) on a sub-15 second basis through a customer-owned qualified energy monitoring device that a customer may procure from the competitive market. Staff notes that this language was similar to language included in its Straw Proposal, but modified to clarify that the customer would be responsible for purchasing the necessary equipment to enable this optional capability. While RECO stated that it did not support the sharing of data with home area networks due to cybersecurity concerns, other commenters

(JCP&L; ENGIE Resources, NRG Energy, and Vistra (“Competitive Suppliers”); and Mission:data) expressed support for this MFR. Therefore, Staff believes that this MFR should be adopted. While Staff shares RECO’s concerns about sharing the data with home area networks due to increased

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vulnerability regarding cybersecurity, the utilization of a behind the meter device will significantly reduce the exposure of cyber risks.

JCP&L Comment: The Company does not object to the recommendation regarding validated data being made available no later than 48 hours after the meter readings are captured. 48-hour data availability from the interval reading would not require new technology and aligns with JCP&L's approved AMI Plan. Under JCP&L's approved AMI Plan, meters are interrogated on "Day 2" between midnight and 4:00 a.m. to capture hours 1 through 24 of "Day 1". Following validation processes, data is sent to third party portal providers for processing and making it available on the Customer Portal by midnight of "Day 2". As such, customers can see hours 1 through 24 of "Day 1" at hour 1 of "Day 3". The result is "Day1 - Hour 1" is available 48-hours from the meter registering its usage. Thus JCP&L's AMI meters would be interrogated on a daily basis to retrieve the *prior* 24-hours' interval data, making 24 hours too short of a period for the interval data to be made available from the time stamp for the interval, which is created when the data is captured from the meter.

The Company also does not object to the recommendation regarding sharing un-validated data to HAN on a sub-15 second basis. As part of JCP&L's Board-approved AMI Plan, the enterprise-wide FirstEnergy AMI solution provides direct access to unvalidated meter data to a customer on a near real-time basis through a customer-owned qualified energy monitoring device and HAN technologies via an interface to the AMI meter on an approximately seven second basis. Neither JCP&L nor any of FirstEnergy's affiliates sell HAN devices; however, a customer may procure a HAN device from the competitive market. JCP&L's Board-approved AMI Plan accommodates customer-owned HAN devices leveraging the standard ZigBee communication local signal between smart meter and device. ZigBee Alliance has a 30 second response rate; however, there is a "Fast Polling Period" that is intended not to last longer than 15 minutes, which Period supports sub-30 second polling. JCP&L would "qualify" devices to assure communication compatibility and in turn list qualified devices on its web-portal for customer selection. JCP&L will accommodate requests from manufacturers to qualify and list a device as well.

Latency in data availability and/or the frequency of meter interrogations will have an impact on JCP&L's entire AMI solution (from Meter-to-Head End), as well as numerous back-end systems processing the data. Thus, any changes requiring the availability of data (validated or unvalidated) within 48 hours will impact the frequency of meter interrogations and data processing schedules by both JCP&L and its third-party portal vendors, which will create additional cost that is not recognized in JCP&L's Board-approved AMI Plan.

3. Adoption of Standardized Customer Privacy and Cybersecurity Requirements.

Staff proposed to require that each EDC adopt clear statement in its Data Access Plan that its customer will be able to share their AMI data with their current and subsequent energy service providers. Staff notes that similar recommendations were set forth in the Straw Proposal, and those were generally supported by stakeholders.

As noted in the Straw Proposal, ease of customer access to energy data is critical to realizing the

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benefits of AMI data sharing. Staff proposes to require that the EDCs coordinate to ensure that the processes by which a customer grants permission to a third party are standardized through a common “one-click” web-based release form, known as the “New Jersey Common Release Form” or “NJ-CRF.” A TPS enrollment that includes the NJ-CRF disclosure information may be used as well to ensure that customers signing up for retail electricity are not required to go through two different processes to ensure that data may be shared with their chosen supplier. In order to ensure that the NJ-CRF is effective, as recommended by Mission:Data, the MFRs prohibit utilities from imposing any additional terms or conditions to the NJ-CRF or imposing additional cybersecurity requirements beyond those established across all EDCs and approved by the Board.⁸

Staff also recommends that customers are afforded the ability to withdraw permission, without penalty, at any time. The common release form shall be web-based, solely accessible by using multi-factor authentication (“MFA”), and include the following information:

- i. Name of the third party requesting authorization;*
- ii. Scope of data fields to be shared, how many periods back (historical), how many periods forward (ongoing), and for which accounts/services;*
- iii. How the data is authorized to be used after consent is given;*
- iv. One-click consent/decline; and*
- v. Confirmation required through MFA.*

Staff agrees that it is important for each EDC’s release form to be consistent amongst the utilities, while simple enough so as not to negatively impact customer participation. In order to ensure comparable treatment of customers across New Jersey, Staff proposed to direct the EDCs, in consultation with interested stakeholders, to agree on the NJ-CRF common release form within 120 days, and provide a joint report to the Board memorializing the standardized approach.

Staff recommends that the EDCs maintain cybersecurity standards consistent with the National Institute of Standards and Technology and industry best practices in order to protect customer data from unauthorized intrusion/release. Staff believes that this MFR will help to ensure that customer data is sufficiently protected. EDCs will not be liable for the acts of customer-authorized third parties, and directs the EDCs to maintain a “bad actor” list of third-party entities that are banned from participation in AMI data sharing, with a right of appeal to the Board for entities who do not believe that a ban is warranted.

Finally, as noted in the Straw Proposal, in the event of an unauthorized release of customer information, each affected utility will be required to notify customers, the Board, the Attorney General, Law Enforcement (or explain why law enforcement was not notified) of the release. Official entities should be informed of the release within 48 hours of the utility learning of the release, and customers should be notified as soon as is practicable;

JCP&L Comment: Preliminary, the Company refers to its Comment in response to Straw Proposal, Topic 1 regarding Access to Data and Topic 2 regarding the NJ-CRF and protecting the customer’s data from unauthorized intrusion/release.

“One-click” sharing ability, including adherence to proposed policies, for which an

overarching governance is required by the BPU, will require build and processes that are in addition to the Company's AMI Plan already approved by the Board and undergoing

implementation. MFA will also require additional technology build and processes, as will "Bad Actor" tracking.

4. Reporting Metrics.

Staff recommends that each EDC report the following metrics to the Board on a quarterly basis:

- Total usage kilowatt-hours ("kWh") and number of EDC customers during the reporting period, broken down by month and customer tariff class. Each EDC shall also provide the same data for each of the previous five (5) years, broken down by month and applicable customer tariff class;*
- Demand level – ("kW") Each EDC shall report the hourly demand curve for each customer tariff class (minimum hourly interval), and during the same quarter for each of the previous five (5) years, broken down by month. Each EDC shall also report the percentage of customers whose demand exceeded tariff level (e.g. incurred demand charges)*
- Number of customers who granted ongoing access to customer data via GBC;*
- Number of customers who granted one-time access to customer data via GBC;*
- Number of customers who withdrew ongoing access permission;*
- Number and type of errors generated (customer-facing) in a data-sharing authorization;*
- Number and type of errors generated (third party-facing) in a data-sharing transaction;*
- Data delivery time after an authorization is granted (in seconds with histogram);*
- Web page loading time (in milliseconds with histogram);*
- Time for third parties to complete technical and administrative onboarding with utilities' GBC systems;*
- Number and type of technical issues reported by third parties or customers, including severity, acknowledgment time with histogram, and resolution time with histogram;*
- Total number and percentage of customers with AMI meters who logged into the data portal;*
- Total number and percentage of customers identified to receive messages regarding their energy savings tools, personalized usage and or savings tips; and*
- Average and median number of instances that a customer logged into the data portal during the reporting period.*

Staff believes that the ongoing provision of performance metrics will be critical to ensuring that AMI continues to deliver benefits to customers.

JCP&L Comment: Preliminary, the Company refers to its Comment in response to Straw Proposal, Topic 12 regarding metrics.

Under JCP&L's approved AMI Plan, periodic reporting of various program metrics occurs on a semi-annual basis. Available metrics include, but are not limited to, Data Access and

Utilization. Metrics are also available for web portal views (number of customers who have accessed the web portal each month), HAN authorized devices (number of customers who have authorized the connection of HAN devices, including a breakout of devices by category, each month)

and TPS data access (number of customers who have authorized TPS access to customer energy usage data each month).

However, further metrics contemplated in the draft MFR will require additional technology build and processes to generate and report at the recommended frequency. JCP&L would have to develop a standard for categorizing errors by type and develop a system to record and report these errors. A similar approach would also be required for issues with data delivery time and web page loading time. JCP&L would also have to track, categorize, and report technical issues reported by third parties, severity levels, resolution time, and the like. These additional metrics as contemplated in the draft MFR are not a part of JCP&L's Board-approved AMI Plan and would require additional build, processes, time to implement and cost.

The periodic reporting of performance metrics like the use of smart meter availability data should not be required until AMI deployment, integration with ADMS, and development of an appropriate process are completed.

5. Data Granularity and Appropriate Rollout Schedule.

Staff recommends that each EDC shall collect 5-minute meter Billable Quality Interval Usage ("BQIU") data, at watt-level precision, for all customers. Staff notes that its Straw Proposal originally recommended that the EDCs "collect five (5) minute meter Interval Usage data, at watt-level precision." While, several EDCs expressed concerns about the need to provide 5-minute meter data to all customers, Staff thinks it is important to have the retail settlement match with the wholesale market framework, which in PJM, is settled on a 5-minute basis. For example, RECO notes that it currently provides commercial customers with interval data on 5-minute basis and residential customers with interval data on a 15-minute basis. JCP&L stated that its AMI plan would provide for intervals of 15 minutes for commercial customers and 60 minutes for residential customers. ACE also supported 60-minute intervals for residential customers, consistent with the AMI programs conducted by ACE's affiliates. Additionally, the New Jersey Division of Rate Counsel ("Rate Counsel") recommended that the intervals be expanded to 10-, 12-, or 15-minute intervals. The Competitive Suppliers supported 5-minute intervals, but stated that such data must be BQIU data, which requires the utilities to verify the accuracy of the data prior to sharing it with the customer and third parties. Based on this feedback, Staff believes that it is appropriate to establish an MFR requiring 5-minute BQIU for customers. Staff understands that this greater data granularity will allow resource aggregations to fully participate in PJM's markets under the reforms proposed under Order No. 2222. Because the PJM FERC 2222 tariff will not be implemented for several years, Staff recommends that an initial interval of 15 minutes be permitted for current residential class customers on the condition that provision for easy (e.g. simple OTA software configuration update) be made upon these customers entering a DER aggregation plan requiring 5-minute interval data.

Staff recommends that AMI data be made available on a rolling basis as AMI meters are installed across the EDCs' service territories and meter certification processes are completed. Staff's current recommendation expands upon its Straw Proposal recommendation, which did not incorporate the meter certification process. In response to comments received from JCP&L, Staff believes that it is reasonable for this MFR to also note that additional time for meter certification will be necessary before transmission of AMI data may begin.

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JCP&L Comment: The Company’s Board-approved AMI Plan currently uses 15-minute interval length for C&I customers and 60-minute interval length for Residential customers. Its metering and all downstream systems are designed and configured to accommodate this data. The interval lengths in JCP&L’s Board-approved AMI Plan align with the required length for deriving bill determinants in the retail Rate Schedules, to be no greater than 60 minutes to support PJM Interconnection, LLC’s (“PRM”) settlement use cases. Also, certain rate schedules leverage interval data for deriving billing determinants for both energy and demand-requiring algorithms dependent on interval length. PJM settlement of the energy market and derivation of Customer Peak Load Contribution (“PLC”) require 60-minute interval lengths.

The recommended configuration change to 5-minute interval length is contrary to JCP&L’s Board-approved AMI Plan. While the metering has capability for 5-minute interval length, changing interval length impacts smart meter operations and IT staffing, meter configurations, communication network capacity, and Information technology (“IT”) infrastructure sizing/scaling for systems (i.e., data center equipment) that store and process interval data. Moreover, performing the recommended Over the Air (“OTA”) configuration change, while possible, is not simply a reconfiguration of the meter itself, but impacts JCP&L’s entire AMI solution (Meter-to-Head End), as well as numerous back-end systems processing the data for both the EDC and the third parties ingesting such data. This capability is not utilized today and will require significant system and process enhancements to automate and perform this OTA configuration change, in addition to a substantial increase in cost to enable capacity of the AMI communication network and back-office system infrastructure to process and store data and systems that provide access to such data.

OTA capabilities to change interval lengths without impacting customer billing will need to be assessed with the meter system manufacturer. The SAP billing system algorithms will need to be updated as current demand and time of use (“TOU”) rates have billing determinants derived from interval data in lieu of meter register values. Processing of interval data for the settlement system will need to be assessed for enhancements to pass appropriate interval lengths to PJM. Supplier Portal and EDI capabilities will also need to be gauged for enhancements to accommodate new interval lengths by both the EDCs and TPSs. The Customer Portal, including JCP&L third party vendors, will need to be assessed for enhancements to accommodate new interval lengths.

The process to change interval length OTA will include additional costs for one-time efforts (i.e., workshop and requirement support, design and build, configuration changes, IT testing, stress testing, business testing and training, et al.), recurring yearly efforts (i.e., IT support and business support), and infrastructure/hardware sizing and scaling for systems that store and process data. These added costs are in addition to and beyond the costs identified and recoverable in JCP&L’s approved AMI Plan.

Before requiring a shorter interval length that would impact AMI system design and costs, the Board should carefully consider the AMI infrastructure already designed and currently being deployed by EDCs.

The Company does not object to the recommendation regarding AMI data being made available on a rolling basis as AMI meters are installed across the EDCs’ service territories and meter certification processes are completed. Under JCP&L’s Board-approved AMI Plan, following a meter

exchange, a meter is “certified” upon passing a communication reliability metric. Thereafter, certification typically occurs within 30 days of a meter exchange. Following certification, interval data is enabled in downstream systems and the meter attains “interval-type” status in the marketplace. JCP&L does not foresee any new technology required to implement this recommendation nor change to its Board-approved AMI Plan.

6. Additional Data Fields.

Staff recommends that any additional data fields (beyond the core energy data set) be included in the published AMI Data set to enable at a minimum the following:

- 1) using AMI Data to track electric vehicle charging;*
- 2) allowing the dataset to identify and correlate retrieved energy data to a status flag of the metered premise as operating within a predefined community (e.g., Disadvantaged Community); and*
- 3) potential use of AMI Data for future Volt/VAR services.*

EDCs shall provide a methodology for handling requests for future data field expansion and access as new applications become envisioned.

JCP&L Comment: The Company does not collect any additional data fields today beyond the core energy data set nor does it disaggregate main meter usage to identify behind the meter loads. For example, JCP&L does not collect “predefined community” information about its customers, but rather only collects geographic information (i.e., zip code) about its customers. Moreover, JCP&L does not have the capabilities today to disaggregate EV charging data from the full AMI data set. If future additional data requirements increase the amount of data points requested, additional infrastructure, including a potential move to different metering technology with different distributed intelligence capabilities, will be required to support the AMI communications network as well as the AMI back-office systems to support the additional volume and processing of AMI data.

This MFR is too vague and open-ended for JCP&L to assess the needed functionality for any additional data fields, as well as cost for such functionality. JCP&L needs more clarification regarding what is considered a “published AMI Data set”, to whom is it available, and how is it “published”. JCP&L also requests further clarification as it relates to whether sub-metering on EV chargers behind the main meter or disaggregation of main meter usage to identify EV charging behind the meter is intended by “AMI Data to track electric vehicle charging”. Further clarification is also needed on what Staff means by “predefined community” status flag in terms of who defines the community and who designates what accounts are in the community. JCP&L also needs more clarification regarding who provides the service allowing for Data Fields to be made available for future Volt/VAR services.

7. Ensuring Fair Access and Competition.

Staff recommends that the following requirements be included within the MFRs to ensure non-

discriminatory access for all third parties and unregulated EDC affiliates, to allow fair access and competition between these parties (collectively “third parties”).

- *On-meter software applications (“apps”)⁹ and other technologies shall be non-discriminatory and open to competition by third-parties;*
- *The EDCs shall coordinate to ensure that AMI meter App Stores are consistent amongst the EDCs while being fair, reasonable and non-discriminatory to authorized third party providers without sacrificing the integrity of the data, reliability of the grid, or increasing vulnerability to cyber threats;*
- *Each EDC’s Data Access Plan shall include clear procedures outlining the process for adding an app to the App Store;*
- *The EDCs shall not diminish or “cripple” any App Store or distributed intelligence functionality for any particular authorized third party app developer and shall complete any security reviews of new apps on a non-discriminatory basis within 8 weeks;*
- *The EDCs shall not be permitted to pre-install their own apps on AMI meters unless the app is solely a utility-facing function or necessary to monitor for vulnerabilities or threats;*
- *The EDCs must report quarterly to the Board on costs and revenues earned from App Stores;*
- *Meter manufacturers shall be prohibited from earning any fee or commission on a third party software app that the customer wants loaded onto their AMI meter. If there is such a fee or commission, that fee or commission must be paid by utility shareholders, not ratepayers or third parties;*
- *Third-party app developers may bring any dispute with an EDC to the Board where a formal escalation and resolution process will be developed;*
- *The EDCs will maximize reverse compatibility on the App Store so that authorized third parties have at least 12 months to adapt their app to new technical requirements prior to removal, unless the revision is due to cyber vulnerability;*
- *The EDCs will provide authorized third-party app developers with all technical documentation and shall be prohibited from withholding or blocking access to technical information necessary for developing, deploying or troubleshooting meter-based apps to the extent feasible without compromising integrity of the data;*
- *The EDCs will provide customer-authorized third parties with an automated application programming interface (“API”) to determine if a given customer is eligible for the installation of a given app onto a meter. For example, a certain customer may be temporarily ineligible due to a meter malfunction or other issue(s);*
- *The EDCs will provide a web-based issue tracking system for authorized third party app developers to log technical requests and bugs;*
- *The EDCs shall be prohibited from surveilling or reverse engineering third-party apps, or engaging in any effort to gain competitive insight or advantage into a third party’s business or product offering, unless the third-party app contains code or vulnerability issues that could impact the integrity of the data;*
- *The EDCs shall offer a service level agreement (“SLA”) describing the App Store’s uptime and availability and responsiveness to bugs and technical issues;*
- *The EDCs shall enable Wi-Fi devices to connect to an AMI behind-the-meter device, including voice assistants, smart home hubs, inverters, EV charging equipment, laptop computers, mobile phones, etc.; and*
- *The EDCs shall not discriminate against any particular type of Wi-Fi device by, for*

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example, imposing pre-screening criteria, fees or security assessments. This information will be a read-only file type and a one-way communication to the consumers.

JCP&L Comment: JCPL's Board-approved AMI Plan does not include deployment of an AMI metering system with the capability to add applications onto the meter. A near term requirement to deploy meters with the capability to add applications would require replacement of JCP&L's metering system approved for deployment in 2023-2025 timeframe, including new meter models, new network equipment, and new head end collection system, potentially delaying JCP&L's AMI implementation beyond the Board approved deployment timeframe. Moreover, adding on-meter software application onto the meters are outside the scope and cost of JCP&L's Board-approved AMI Plan and would require additional build, processes, cybersecurity assessment, time to implement and cost.

The Company's currently selected meter manufacturer has a next generation meter available today. However, it requires a separate supporting AMI metering system (i.e., meter model, communication network, and head end) than that approved in JCP&L's AMI Plan and deployed by its sister utilities in Ohio and Pennsylvania. As detailed in JCP&L's Board-approved AMI Plan, synergies from leveraging existing FirstEnergy corporate-wide solutions enable a cost-effective AMI solution for JCP&L's ratepayers.

JCP&L is assessing adaptation of next generation meters onto its existing AMI metering system, which would allow for systematic addition of such meters while avoiding mass deployment to replace all existing meters, thus stranding their cost. The Company's currently selected meter manufacturer is in the development phase of a backward compatible next generation meter and has not provided JCP&L with a firm production date. The Company is evaluating research and development efforts including other Smart Metering Solution Providers for next generation meter compatibility with its core AMI solution.

JCP&L's AMI platform is a vendor-provided solution, and the software is their proprietary property. Third party apps are certified by the meter vendor, not the utility. The third-party app developer works with the meter vendor to ensure the app runs on the applicable meter platform and it does not corrupt the meter or system. Once the app is certified by the meter vendor, it can publish the app and make it available for select utilities or available for all.

Regarding the Wi-Fi communication protocol of this MFR, meters approved in JCP&L's Board-approved AMI Plan have a ZigBee wireless signal for communicating with in-home devices.

8. Billing and Settlements.

Staff recommends that each EDC settle customer accounts using actual AMI customer data, rather than estimated data. Staff also recommends that each EDC establish the customer's Peak Load Contribution ("PLC") using each customer's load data. Staff notes that this recommendation was supported by the Competitive Suppliers, Mission:data, and Rate Counsel. JCP&L did not believe Staff's recommendation was necessary because this process would occur organically. PSE&G noted that this recommendation would have a significant impact on load settlement and PLC processes but did not object to Staff's recommendation. Based on the comments received, Staff believes the recommendation to require AMI data to be used for determining PLC and settling

customer bills based on actual usage data is appropriate.

JCP&L Comment: The Company does not object to the recommendation regarding the actions that this MFR seeks as it will occur organically to the benefit of the EDCs and customers as AMI implementation proceeds. Further, the Company does not foresee that this MFR will require new technology or a change to its Board-approved AMI Plan.

9. Format of Data Sharing.

Staff recommends that the EDCs enable GBC as a means for customers or their agents to access AMI usage data. Staff also recommends that the EDCs enable authorized third parties to access their customers' interval usage data through the Electronic Data Interchange ("EDI") as well as through the EDCs' supplier web portals via flat files (i.e., "batch CSV" or Tab-delimited files). These data sets should contain a rolling 14 days' worth of UI data delivered through supplier portals daily and accessible through an automated API solution. Staff notes the use of EDI and flat files, will allow authorized third parties to automatically download customer files each day through a secure supplier web portal, allowing the supplier to more efficiently manage large quantities of data. Staff further notes that GBC was generally supported by stakeholders as an appropriate method for customers to access their own data. Several commenters also noted that GBC can be implemented differently by different utilities. In order to ensure comparable treatment of customers across New Jersey, Staff proposed to direct the EDCs to agree on a common implementation of GBC, in consultation with stakeholders, within 120 days, and provide a joint report to the Board memorializing the standardized approach.

Staff also recommends that AMI data be transmitted to the authorized third parties no longer than 60 seconds after customer authorization. Staff agrees that the authorized third parties should be able to access customer data as soon as possible after customer authorization is received, unless there are specific cyber threats and verification processes that dictate a longer period. Further, each EDC shall ensure 99.5% uptime of GBC services and public reporting of uptime and performance metrics.

Staff recommends that the following data types to be shared with authorized third parties, in addition to AMI usage data:

- All customer billing information, including, but not limited to, account information, meter information, rate information, and any other data necessary to participate in various demand management programs;*
- Premise addresses for multi-site customers; and*
- Customer account number(s).*

Staff recommends that the EDCs shall not be permitted to charge a fee to the customer or to the third party with whom the customer wishes to share their AMI data, including authorized third-party suppliers, Distributed Energy Resource aggregators, and other energy services companies. Staff notes that this position was supported by Rate Counsel and the Competitive Suppliers. However, PSE&G and JCP&L argued that utility customers alone should not bear these costs. In order to maximize the potential of AMI data sharing, Staff believes that its MFRs should require that the EDCs not charge any fees to access AMI data.

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JCP&L Comment: Preliminarily, the Company refers to its Comment in Topic 1, above, regarding access to data and data sharing with authorized third parties.

Under JCP&L's Board-approved AMI Plan, which is currently in the process of implementation, Green Button "Download" format is currently available on the - Customer Portal for those customers that establish an account ("My Account"). Customers have the ability to view and download interval data into XML or CSV file formats on a rolling basis as smart meters are deployed and certified across the service territory. This capability is enabled through third party providers with integrated web-pages behind My Account for a seamless web experience. JCP&L's approved plan also accommodates customer-owned HAN devices.

While Green Button "Download" is currently available under JCP&L's Board-approved AMI Plan, GBC would be an enhancement envisioned on the Customer Portal behind My Account, in addition to Green Button Download. This will require revision to the third party provider contracts and appropriate design/build by all parties. Enabling customers to authorize their agents access will also require additional build and processes beyond the customer granting agent access to their My Account, unless it is part of standard GBC functionality (whereby customer can "connect" data to selected agents).

The release of customer data is performed pursuant to BPU Rules and Regulations pertaining to those third parties licensed by the BPU, or as authorized by the customer for release of data to non-licensed third parties. "Licensed" third parties are provided interval data via existing EDI and Supplier Portal. Given the volume of requests anticipated to be received because of the plethora of use cases for the data capable of being obtained through AMI, JCP&L encourages the Board to evaluate its statutory and regulatory authority to put the onus on receiving and confirming customer consent on the third parties requesting the customer data and to seek legislative changes, if necessary, to permit such a construct.

JCP&L's Board-approved AMI Plan includes SU-MR, StS-HIU, and StS-Rolling 10-day Supplier Portal functionality for licensed TPSs, which is similar to current data access mechanisms employed by JCP&L's sister companies in Ohio and Pennsylvania. However, converting data sets from a rolling 10-day data delivery to a rolling 14-day data delivery will require an enhancement.

Non-Licensed third parties obtain data from the Utility with a legacy Letter of Authorization signed by the customer, or directly from the customer via customer-owned HAN devices or customer provided Green Button Downloads as approved in the JCP&L AMI Plan. Any requirement to enable EDI and/or Supplier Portal access to non-licensed third parties will require enhancement.

Further, please refer to the Company's Comments in response to Straw Proposal, Topic 8 regarding data sharing without charge/cost socialization.

10. Emergency Responders Access.

Staff recommends that AMI data must be accessible to Emergency Responders as this information can provide vital situational awareness and support emergency response planning activity. The real time outage profile of a community during a disaster can greatly enhance emergency responders'

ability to quickly establish evacuation routes, determine shelter needs and viable locations, resource distribution sites and other community and responder needs. A designated responder portal or other well designed access mechanism to the AMI network for specially authorized officials responding to emergency events is an essential asset for emergency response. RECO expressed concerns about emergency responders having direct access to the system and argued that this level of sharing must comply with the Federal and State law. However, RECO currently does share information with municipalities that includes AMI data. Therefore, Staff still believes that this recommendation is appropriate.

JCP&L Comment: Enabling AMI data access to Emergency Responders through a designated responder portal or other well designed access mechanisms will require an additional system build, time to implement, and development/revision of business processes and training of internal and external stakeholders on the various ways that AMI information can be used to enhance and support the current emergency response process.

Please refer to the Company's Comments in response to Straw Proposal, Topic 11 regarding near term and longer term plans to incorporate methods into our systems and processes in a staged manner such that AMI data and information can be used to benefit emergency responder effectiveness and safety.

11. Appropriate Utility Use of AMI Data.

Staff recommends that any use cases that are outside of the EDC's core functions (such core functions include billing, settlements, and reliability) be open to competition by authorized third parties. Staff believes that this MFR is necessary to ensure that the EDCs do not gain an unfair competitive advantage over other entities. Staff also recommends that all consumer AMI data is not for resale.

Finally, Staff proposes to adopt data sharing to promote academic research into energy usage and clean energy adoption. Utilities must provide access for legitimate, non-commercial academic research, into customer usage and system reliability by faculty, graduate students or post-doctoral fellows, associated with academic institutions on an anonymized usage basis, at the zip code or sub-zip code level.

JCP&L Comment: DAPs should not contain a requirement limiting EDC core functions to billing, settlements, and reliability. EDCs core functions have changed and will continue to increase to include the use of customer data for various EDC Energy Efficiency ("EE") and DR programs that may include programs that include other Distributed Energy Resources ("DER") types such as battery storage, EVs, and the like, some of which may not be determinable at this time. Further, discussion around the limits to be placed around EDCs' proper functions are broader than the scope of this proceeding and thus not appropriate for determination as part of this proceeding. Moreover, this MFR implies that the responsibility for data privacy and data security remains the burden of the EDC, while also requiring the sharing of data with third parties. Relatedly, further clarification is needed of the obligation and legal responsibility of the third party for data privacy. Given the volume of requests anticipated to be received because of the plethora of use cases for the data capable of being obtained through AMI, JCP&L encourages the Board to evaluate its statutory and regulatory

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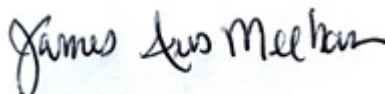
authority to put the onus on receiving and confirming customer consent on the third parties requesting the customer data and to seek legislative changes, if necessary, to permit such a construct.

Please refer to the Company's Comments in response to Straw Proposal, Topic 10 regarding the sufficiency of existing affiliate relations rules, public utility holding company standards, along with Board approval of utility AMI Plans, and Board approval of DAPs (affording data access to other parties) to safeguard against monopoly advantage concerns while permitting utilities the flexibility to use customer data in new ways when appropriate.

Enabling data sharing to promote academic research into energy usage and clean energy adoption will require additional build and business processes to ensure that customer information is kept confidential and can be utilized in a cost-effective manner. Please refer to the Company's Comments in response to Straw Proposal, Topic 9 regarding a working group setting to address this issue.

JCP&L appreciates the opportunity to provide these comments on the Draft Minimum Filing Requirements and hopes that the Staff will find them helpful. The Company stands ready to participate in additional stakeholder workgroups and discussions that will be necessary to more closely address the significant implementation issues raised by this proposal, and prior to adoption of an Order. If there are any questions, please contact me.

Very truly yours,



James Austin Meehan
Counsel for Jersey Central Power & Light Company