

**Pennsylvania Web Portal Working Group**

**Technical Implementation Standard**

**Single User – Multiple Request**

**PUC Docket No. M-2009-2092655**

**Related Order Issued September 3, 2015**

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# Version History

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| --- | --- | --- |
| Version | Date | Description of Change(s) |
| 0.1D | 2/26/2016 | Initial Draft Version |
| 0.2D | 3/8/2016 | Revised based on PECO comments and discussion during 3/8 meeting. Also added SU-MR CC #001. |
| 0.3D | 3/18/2016 | Updated as follows:1. Security and Technical – added ‘Data-at-Rest’ information
2. Data Response – updated DST requirements to match other standard documents
 |
| 0.4D | 3/31/2016 | Updated as follows…1. Added Quantity Qualifiers (1.3.12 & 1.3.13)
2. Added requirement for EDCs to publish their specific data file formats in their user guide (1.3.19)
3. Added example to end (p.17)
 |
| 1.0 | 4/5/2016 | No changes except version # and date. WPWG approved, final version for submission to PUC |
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# Summary

This document contains the technical standard developed by the Electronic Data Exchange Working Group’s (EDEWG) Web Portal Working Group (WPWG). The PaPUC required EDEWG to develop a standardized solution for the acquisition of historical interval usage and billing quality interval usage data via a secure web-portal, as specifically directed and detailed within the Pennsylvania Public Utility Commission’s (PaPUC’s) Smart Meter Procurement and Installation Order entered December 6th 2012 at Docket M-2009-2092655. Via Secretarial Letter dated 4/17/2014, in response to a request from EDEWG leadership, the PaPUC agreed that the contents herein would represent the minimally required standards to which each EDC’s solution must adhere, as opposed to standards applicable to a “standardized” solution common to all EDCs. Subsequently the PaPUC required EDEWG to develop standards for System-to-System (StS) functionality under Order entered and September 3rd 2015 at Docket M-2009-2092655.

This Technical Implementation Standard applies to the use of the Single User – Multiple Request (SU-MR) method for sharing smart meter data. The SU-MR method requires a web-based platform allowing for an authorized user to manually log into a secure portal, request, and receive smart meter interval usage for one or more account numbers as part of a single request. The results are rendered within the web portal interface itself or exported to the user in a predefined file format.

# General Notes

1. The following Electric Distribution Companies (EDCs) are required to support a Web Portal:
	1. Duquesne Light Comany
	2. First Energy (MetEd, Penelec, Penn Power, West Penn Power
	3. PECO
	4. PPL Electric Utilities
2. The web portal is intended for the following customer-authorized third parties: Licensed Electric Generation Suppliers (EGSs), Act 129 Conservation Service Providers (CSPs) contracted with the EDCs, and their contracted agents.   CSPs (either Curtailment or Conservation) desiring to access the web portals addressed by this framework either be provided access as agents of an existing EGS **OR** be licensed as EGSs themselves as a prerequisite to receiving access.
3. The PaPUC has not directed that this web portal use existing or potentially future EDC online customer communication platforms.
4. Any related items not specifically addressed by these standards are at the discretion of the individual EDCs.
5. Any change, modification or update to this data standard requires EDEWG approval via the change control process.

# Secure Web Portal Standard for Single User – Multiple Request

The Web Portal solution standards can be broken down into the following processes:

1. **Certification, Access, and Customer Privacy**
2. **Data Request**
3. **Data Response**
4. **Security and Technical**
5. **Tracking and Reporting**
6. **EDEWG Leadership Responsibilities**
7. **Certification, Access, and Customer Privacy**
8. Portal user eligibility
	1. Each request will be logged into a unique Web Portal for each EDC.
	2. Entities licensed by the PUC as an EGS are eligible to access the web-portal. (Licensee status is available on the PaPUC’s website at <http://www.puc.state.pa.us/consumer_info/electricity/suppliers_list.aspx>. )
		1. These include EGSs themselves, Conservation Service Providers (considered by PaPUC as “CSPs”), and demand response / load management providers (also known as Curtailment Service Providers, considered by PJM as “CSPs”). (Other third parties not considered PUC-licensed entities in this regard include but are not limited to researchers, public agencies with subpoenas, PaPUC-licensed Natural Gas Suppliers (NGSs), customers themselves, and other customer-authorized entities.)
		2. CSPs (either Curtailment or Conservation) desiring to access the web portals addressed by this framework either be provided access as agents of an existing EGS **OR** be licensed as EGSs themselves as a prerequisite to receiving access.
			1. The PUC has the authority to penalize EGSs for fraudulent operations.
			2. CSPs contracted with EDCs for Act 129 work are governed by PaPUC regulations over the EDC and the principal/agent relationship between the EDC and CSP.
		3. Unlicensed subcontractors or agents of licensed EGSs, such as Electronic Data Interchange (EDI) and billing providers, are eligible to receive access to the web portal on behalf of licensees that they represent, but their use must be directly associated with those licensees under the assumption that users are only accessing the portal in support of service to a specific licensed entity. For example, a provider obtaining usage for an account on behalf of fictitious supplier “ABC Energy” must be logged in such that the “ABC Energy” licensee is associated with and held accountable for associated use of the portal by that provider on ABC Energy’s behalf. *(This is covered in more detail in Section 2.5, Tracking and Reporting.)*
		4. This standard does NOT authorize the capability for customers or other 3rd parties (entities not licensed by the PaPUC as EGSs) to access this information. Such entities are **NOT** eligible for access to the web portal and must obtain customer data via other means.
			1. Alternative means of obtaining customer data include contacting the customer directly for authorization or – at the discretion of the EDC – submitting requests to the EDC accompanied by proper Letters of Authorization, or “LOAs”.
9. Access Management
10. EDCs may provide access to the web portal for said EGS after verifying that the EGS is PaPUC-licensed. (Completion of EDI certification testing is not a prerequisite.)
11. 3rd parties that require Web Portal access but not full certification or treatment as an EDI-capable trading partner will have to submit a request to that EDC directly for web portal access. (The EDC must verify that the party is PaPUC-licensed as an EGS or broker/marketer prior to granting access.)
12. The minimal requirement is for individual-level credentials, meaning one unique user ID per individual per PaPUC-licensed EGS entity.
13. Each use of the portal is directly associated with exactly one PaPUC-licensed entity.
14. EDCs will associate a unique user ID with an entity’s name and DUNS+4 number(s). (The user ID cannot be the user’s e-mail address.)

***NOTE:*** *EDCs may elect to implement user IDs at the organizational level, meaning one user ID per user regardless of the number of DUNS+4 entities associated with that user, dependent upon the feasibility and cost-effectiveness of this option.*

1. Each user ID must be associated with a **non-public** e-mail address directly associated with either the licensed entity itself or the associated subcontractor/agent. (Examples of forbidden public e-mail addresses include but are not limited to Gmail, Yahoo, Hotmail, and AOL.)
2. Users within unlicensed subcontractor/agent organizations that support multiple PaPUC-licensed EGS entities are subject to the following:
3. Each user must receive unique user IDs for each PaPUC-licensed DUNS+4 numbers supported, as deemed appropriate by the associated entities themselves on a case-by-case basis.
4. For each use, the user is responsible for accessing the portal with the user ID associated with the licensed DUNS+4 numbers that their portal usage supports. All activity under that user ID must be in support of the associated licensed entity’s DUNS+4 number, since the PaPUC will hold the licensed entity responsible for the user’s actions.
5. The EDC cannot and therefore will not attempt to detect whether an individual user is accessing the portal with the appropriate user ID.
6. The EDC must publish and communicate availability of a user guide for all portal users which covers the following:
7. Functional use of the solution
8. Any EDC-specific administrative or security conditions more stringent than the standards published in this document
9. The EDC must maintain, re-publish, and re-communicate the availability of the user guide as changes occur
10. The EDC will designate at least two “administrators” for each PaPUC-licensed entity’s DUNS+4 number as specified by that entity. (If applicable, the same administrators may be responsible for administration on all of that entity’s DUNS+4 numbers.) The administrators are responsible for the following:
11. Authorizing and communicating requests for the EDC to grant portal access to users (includes both new users and previously terminated users). The EDC may only honor requests sent directly by an administrator.
	* + 1. The EDC has the option to grant each entity’s administrator the ability to add or remove user access for the given entity.
12. Promoting awareness and review of the EDC user guide to all authorized users within their organizations.
13. Maintaining attributes of existing portal credentials.
14. Terminating/revoking access of existing portal credentials.
15. On a quarterly basis, reviewing and attesting to appropriateness of access for all users associated with that specific licensed entity. (In the absence of timely attestation, the EDC has the right to revoke access for all users associated with a specific entity, including administrators.)
16. The EDC is responsible for the following:
17. Upon request from **ONLY** the entity’s identified administrators, granting access to new users as well as to users whose access was terminated/revoked – assuming that the e-mail address associated with the user is a non-public address,.
	* + 1. The EDC has the option to grant each entity’s administrator the ability to add or remove user access for the given entity.
18. Driving the quarterly review process required of licensed entities via reminder communications.
19. Revoking access for all users associated with a particular entity if the administrators for that entity fail to complete the quarterly review(s) in a timely manner.
20. Performing and attesting to completion of its own quarterly review with regard to EDC user access.
21. The PaPUC will audit and if necessary pursue licensee organizations, not individuals.
	* 1. Customer Privacy
	1. Prior PaPUC regulatory mandates require that the EDC make this data available to EGSs and place the burden of customer authorization on licensed EGSs and their agents, who are subject to PUC audit for the same.
	2. The Web Portal will adhere to the privacy standards mandated by the PaPUC regardless of the customer’s preference for release of information on file with the EDC.
22. **Data Request**

Once an EDC has granted a requestor access to the Web Portal, the requestor will be able to initiate requests for the available data via an online, user-driven process.

For the initial phase of implementation, each EDC will minimally provide data at the ACCOUNT level. Given the PaPUC requirements in the Order for meter-level data, each EDC will work toward providing data at the METER level in a subsequent phase of implementation after the initial phase of its solution matures.

1. At a minimum, the EDC must satisfy requests for usage data at the ACCOUNT level. (Providing METER-level data is optional.
2. The same eligibility rules leveraged in providing historical usage in response to EDI-based requests apply when providing usage via the portal. (Example: PECO does not honor EDI-based historical usage requests on finalled accounts.)
3. An EGS may request account-level information for at least ten (10) customer accounts at a given time.
4. An EGS may request meter-level information for one (1) customer account at a given time.
5. The EDC web portal must be able to accommodate such a request by providing the requested usage data simultaneously in the required format.
6. Above the minimal standard of 10 accounts, EDCs reserve the right to cap the maximum number of account numbers requested simultaneously at their discretion.
7. The web portal will require the EGS to provide only the EDC account number in the request.
8. The EDC web portal may either permit EGSs to either directly enter the account number(s) into the portal, allow the EGS to upload an Excel spreadsheet listing the account numbers for which information is requested, or both.
9. Each EDC will have the ability to design its own User Interface (UI) for the web portal.
10. This solution will not support a ‘subscription service’.
11. **Data Response**

Upon receipt of a Request, each EDC will respond with the associated data for each account number requested.

1. The Response process begins once a valid Request has been submitted.
2. The EDC may reject all or part of a request (meaning all or only selected account numbers) and must provide a descriptive rejection reason.
	1. The EDC may reject individual account numbers within a given request based on errors unique to the specific account numbers requested (for instance, invalid or ineligible account numbers, not an interval-metered account, interval data unavailable/missing, etc.).
	2. The minimum standard will be to replicate the EDI reject reason. Follow-up questions on reject reasons will be supported by pre-existing EDC supplier support processes.
3. For each account number requested at the account level where the EDC has data available, the EDC must render the following information online for each account:
	1. EDC account number
	2. Start and end dates for each billing period listed.
	3. A minimum of the 12 most recent billed periods of account-level monthly summary usage, aka consumption or kWh. (NOTE: 12 moths may not be available, in which case the portal will return data for the available number of months.)
	4. A minimum of the 12 most recent billed periods of account-level monthly demand, aka kW (both measured/registered and calculated/billed; Also, see note above regarding 12 months not necessarily being available – also applies here)
	5. Quantity Qualifiers for both summary usage and registered demand (designates actual vs. estimate and load vs. generation)
	6. All account-level or rate-level (varies by EDC) data elements provided in the Scheduling Determinant (FG) loop of the EDC’s EDI historical usage transactions. This includes but may not be limited to Peak Load Contribution (current and future if known), Network Service Peak Load (current and future if known), bill group/cycle, rate class, rate subclass, and load profile.
4. For each account number requested at the meter level where the EDC has data available, the EDC must render the following information online for each meter:
	1. EDC account number
	2. Meter number
	3. A minimum of the 12 most recent billed periods of meter-level monthly summary usage, aka consumption or kWh (NOTE: 12 moths may not be available, in which case the portal will return data for the available number of months.)
	4. A minimum of the 12 most recent billed periods of meter-level monthly demand, aka kW (both measured/registered and calculated/billed; Also, see note above regarding 12 months not necessarily being available – also applies here)
	5. Start and end dates for each billing period listed.
5. The EDC must provide the capability for the portal user to download the required data elements for each of the requested account numbers in the common comma-delimited CSV format included in Appendix A of this document.
	1. For account-level requests, the portal must provide the capability for the user to download one file per account requested.
	2. For meter-level requests, the portal must provide the capability for the user to download one file per meter on a requested account.
6. Historical summary and interval usage data shared that pertains to the standard originally required by March of 2014 must be billed data, defined as data from a billing cycle for which the EDC has already billed the customer.
	1. This data is subject to change in the event that the EDC cancels and rebills those periods.
	2. Only the most recent version of billed data will be available in the portal.
7. Data within 48 hours of the read must be “bill-quality”, defined as “data that is sourced from an EDC’s meter data management system that has completed the process of being verified, estimated, and edited” as cited from Page 16 of the PaPUC Final Order. This means that the EDC has not necessarily billed the associated period yet.
8. Only the most recent version of usage data will be available in the portal.
9. All timestamps presented in the portal should be presented in 24-hour Eastern Time.
10. All intervals must be presented in hour-ending format.

**NOTE:** The solution assumes that all EDCs bill a 24-hour period of usage on a midnight-to-midnight basis.

1. Each element listed is defined identically to the manner in which it is defined in the Pennsylvania Electronic Data Exchange Working Group (EDEWG) EDI Implementation Guides. Considering the PUC Order states that Meter Level should be provided, the EDCs proposed that the first implementation will delivery Account level, and each EDC will work toward providing Meter level as the market matures.
2. Data elements available to users in the downloadable file format for accepted account-level requests must include the following:
	1. Customer identifier (varies by EDC; Account number is an example)
	2. Customer name
	3. Report title (Account-Level Usage or Meter-Level Usage)
	4. EDC name
	5. Usage start and end dates (encompass all data provided in report)
	6. Peak Load Contribution, kWh (PLC, also known as “capacity obligation) – Current and, if known, future
	7. Network Service Peak Load, kWh (NSPL, also known as “transmission obligation”) – Current and, if known, future
	8. Rate Class
	9. Rate Subclass (if applicable for EDC; Otherwise, leave blank)
	10. Bill Cycle
	11. Load Profile
	12. Special Meter Configuration (currently indicates net metered status)
	13. A minimum of the 12 most recent billed periods of account-level monthly summary usage, aka consumption or kWh, with the most recent data first (NOTE: 12 months may not be available, in which case the portal will return data for the available number of months)
	14. A minimum of the 12 most recent billed periods of account-level monthly demand, aka kW, with the most recent data first (both measured/registered and calculated/; Also see note above regarding 12 months not necessarily being available – also applies here)
	15. Detailed account-level interval usage data, aka consumption or kWh, with the most recent data first, spanning the 12 most recent billed periods as well as bill-quality interval data available within 48 hours of the read that the EDC has not yet billed (See note above regarding 12 months of billed data not necessarily being available – also applies here)
	16. Actual interval ending-time to designate the interval increment. (SU-MR CC #001)
	17. Quantity Qualifiers for summary usage, summary registered demand, and detailed interval usage (designates actual vs. estimate and load vs. generation as well as unavailability of a specific interval)
		1. Valid Quantity Qualifiers…
			1. QD = Actual Consumption (load)
			2. KA = Estimated Consumption (load)
			3. 87 = Actual Generation
			4. 9H = Estimated Generation
			5. 20 = Unavailable (data not available for interval reading)
	18. Quality Indicator (populated with “VEE” if the EDC has not yet billed this data)
3. Data elements available to users in the downloadable file format for accepted meter-level requests must include the following:
	1. Customer identifier (varies by EDC; Account number is an example)
	2. Customer name
	3. Report title (Account-Level Usage or Meter-Level Usage)
	4. EDC name
	5. Premise (corresponds to a specific physical location)
	6. Service Point (corresponds to a specific electric service)
	7. Meter Number
	8. Meter Manufacturer (name)
	9. Meter Multiplier
	10. Usage start and end dates (encompass all data provided in report)
	11. Peak Load Contribution, kWh (PLC, also known as “capacity obligation) – Current and, if known, future
	12. Network Service Peak Load, kWh (NSPL, also known as “transmission obligation”) – Current and, if known, future
	13. Rate Class
	14. Rate Subclass (if applicable for EDC; Otherwise, leave blank)
	15. Bill Cycle
	16. Load Profile
	17. Special Meter Configuration (currently indicates net metered status)
	18. A minimum of the 12 most recent billed periods of meter-level monthly summary usage, aka consumption or kWh, with the most recent data first (NOTE: 12 months may not be available, in which case the portal will return data for the available number of months)
	19. A minimum of the 12 most recent billed periods of meter-level monthly demand, aka kW, with the most recent data first (both measured/registered and calculated/; Also see note above regarding 12 months not necessarily being available – also applies here)
	20. Detailed meter-level interval usage data, aka consumption or kWh, with the most recent data first, spanning the 12 most recent billed periods as well as bill-quality interval data available within 48 hours of the read that the EDC has not yet billed (See note above regarding 12 months of billed data not necessarily being available – also applies here)
	21. Actual interval ending-time to designate the interval increment. (SU-MR CC #001)
	22. Quantity Qualifiers for summary usage, summary registered demand, and detailed interval usage (designates actual vs. estimate and load vs. generation as well as unavailability of a specific interval)
		1. Valid Quantity Qualifiers…
			1. QD = Actual Consumption (load)
			2. KA = Estimated Consumption (load)
			3. 87 = Actual Generation
			4. 9H = Estimated Generation
			5. 20 = Unavailable (data not available for interval reading)
	23. Quality Indicator (populated with “VEE” if the EDC has not yet billed this data)
4. The Historical Interval Usage data must accommodate Daylight Savings Time (DST) events on the appropriate date.
5. Spring DST – For the short DST usage delivery date only, the interval reading during the time event will be null. The DST intervals will be reported as follows:
	1. 60 minute – 0300 interval null
	2. 30 minute – 0230 and 0300 intervals null
	3. 15 minute – 0215, 0230, 0245 and 0300 intervals null
6. Fall DST – For the long DST usage delivery date only, additional interval usage values will be populated in the columns at the end of each record as a second set of data for hour-ending 0200, labeled 0200D (0115D, 0130D, 0145D). These columns will include null values for all other usage delivery days. The DST intervals will be repeated as follows:
7. 60 minute – 0200 interval repeated
8. 30 minute – 0130 and 0200 intervals repeated
9. 15 minute – 0115, 0130, 0145 and 0200 intervals repeated.
10. The downloadable files must accommodate Spring Daylight Savings Time in hour-ending interval 3 via blank values on the appropriate date.
11. Precision of usage values will be dictated by the degree of precision available from each EDC’s AMI network. This solution will not dictate usage precision standards.
12. On-peak and off-peak characteristics of usage and demand are ***not*** necessary to include in the web portal, as these elements are typically tied to EDC tariffs. EGSs may calculate such components at their own discretion.
13. The EDC will respond to each request in “near real time”.
14. The EDC will document their individual data file formats for both the online and downloadable CSV responses in their web portal user guide.
15. **Security and Technical**

Customer data must be delivered with the highest integrity and privacy. The Security standards cover the standards, tools, and policies that will be considered for the exchange of this data.

Several of these standards are varied adaptations of the Guidelines for Smart Grid Cybersecurity published by the National Institute of Standards and Technology, or NIST. (NIST also refers to these guidelines as Interagency Report 7628, or NISTIR 7628.)

*NOTE: EDC policies and procedures, including but not limited to those governing information security and configuration management, may be more stringent than the standards identified in this section. In the event of contradictions between these standards and EDC policies and procedures, the more restrictive of the two shall govern.*

1. No data governed within the scope of these standards will be publicly accessible.
	1. Valid user login to an EDC’s secure web portal is required to access all related data.
	2. All other access must be denied.
	3. The user must log on each and every time they access the portal. (Any capability designed to “remember” the user should not preclude user logon.)
2. At a minimum, EDC portal solutions must be compatible with the two most recent major versions of Microsoft’s Internet Explorer web browser.
3. Each EDC’s portal solution requires the use of a non-self-signed SSL certificate issued by a Microsoft-trusted authority for governance of secure user connections via HTTPS, both before and after user authentication at logon.
4. When a user attempts to log into the web portal, the portal must mask the user’s password as the user enters it.
5. Immediately following successful user authentication and login, the portal must provide the following to the user:
	1. Details of user’s last login (date/time)
	2. Applicable EDC’s legal disclaimers, terms, and conditions as applicable (scope of which is based on EDC information security policies and PaPUC privacy regulations)
	3. Capability for user logged on to affirmatively agree to EDC terms and conditions presented, as a prerequisite to accessing usage data
6. The web portal will limit users to one concurrent session per credential.
7. The portal will lock out a user’s portal credential and prevent access if that user fails to successfully login with the same credential five times within a 30-minute period.
8. The portal will enforce a session timeout and lock a user’s portal session when that user has been inactive for 30 consecutive minutes. The user must be required to re-login to the portal to continue.
9. Regarding the practice of “screen-scraping”:
	1. Portal users must not scrape billed usage data from portal screens. This data is available to licensed EGSs via Pennsylvania’s approved statewide standard of EDI.
	2. EDCs must not implement measures specifically designed to prevent screen-scraping. However, as a mitigating practice if necessary to limit the impact of screen scraping on portal performance, EDCs have the right to implement a daily cap (maximum) number of account numbers for which usage is requested per user ID.
10. The EDC must notify portal users of any planned changes no later than two weeks prior to the planned implementation of those changes. (NOTE: This does not apply to implementation of added functionality that would have no impact on existing portal functions.)
11. If an EDC’s secure web portal experiences either technical problems or a cybersecurity incident (as defined by EDC information security procedures) which substantially disrupts portal operations OR increases the risk of compromising portal information (inadvertently allowing unauthorized users access to either customer usage data or user credentials), then the EDC must immediately perform the following:
	1. Deny all new attempts to access the portal by default, gracefully indicating to users attempting to log on that the portal is temporarily unavailable.
	2. Immediately terminate all active user sessions such that users already logged in can no longer access the data without re-logging into the portal.
	3. Communicate status to portal users and stakeholders as appropriate given the nature of the issue or incident.
		1. Avoid disclosing restricted details that could aid cybersecurity attackers.
		2. Consider EDEWG Leadership and PaPUC liaisons to EDEWG as impacted stakeholders.
	4. Leave the above restrictions in place until deeming that the issue has been resolved and that any associated risk has been sufficiently mitigated. (This will vary based on several factors, potentially including but not limited to identification of the source of the issue and the degree to which any collateral damage has been contained.)
	5. This standard does not supersede pre-existing EDC cybersecurity incident response plans. EDCs will always execute their own plans and rely on their own definitions with regard to cybersecurity incidents.
12. Error handling within the portal for all technical / internal system errors encountered (as opposed to rejected usage requests for an account) must not reveal more to the portal user than a simple error code and a “graceful” error message indicating next steps.
13. EDC portal solutions may only leverage Javascript-based active content (embedded software components triggering actions automatically) and mobile code (code that a web browser must process, typically triggered by active content). EDCs should refrain from using other similar technologies including but not limited to ActiveX controls, Flash, and VBScript within their portal solutions.
14. Data-at-Rest
	1. Defined as stored electronic information that is not in motion/transit, regardless of storage medium. Storage mediums include but are not limited to databases, file systems, storage networks, memory (temporary / cached or otherwise), and other writeable media.
	2. EDCs and third parties authorized to use these solutions (as well as their agents) will employ reasonable technological measures to properly secure related customer, account, and usage data-at-rest within the scope of these solutions. Such protections may include the use of encryption for rendering such data unusable, unreadable, and/or indecipherable to unauthorized individuals. Existing measures in place for this or other sensitive customer information procured via other means may also be sufficient.
15. **Tracking and Reporting**

*NOTE: The PA WPWG is not aware of any specific PaPUC reporting requirements relative to portal use and therefore assumes that the following standards would support any necessary ad hoc reporting for either EDCs or market participants on portal use and administration.*

1. The EDC must track the following portal-related event information on a per-user basis:
	1. User changes (user ID, associated entity, last updated date/time, add/update/terminate)
	2. User login attempts (user ID entered, login attempt date/time, successful/failed)
	3. Accounts queried (user ID, associated entity, EDC account number requested, date/time, yes/no for data provided, account-level/meter-level if “yes”, reason for rejection if “no”)
	4. Quarterly review status of licensed entities (user ID, attestation date/time)
2. The portal must perform all logging on the server-side.
3. The portal may only leverage cookies on the client-side if cookies are necessary for the purposes of session management and/or personalization.
4. The portal must retain all of the above portal-related event information for a period of at least three years.
5. Each EDC’s portal must provide the capability for users associated with each licensed entity to query and download any of the above portal-related event information within a specified date range for one or more users associated with that specific entity (but no others).
6. The EDC must have the capability to query and download any of the above portal-related event information for one or more users and/or licensed entities.
7. The portal must not allow any user, including EDC users, to directly edit the above log data.

# SU-MR Downloadable Usage File Example

**Example provided as reference only. Each EDC must provide individual data file format(s) in their user guide.**

**Account-Level Usage (post csv)**

