Reliability Matters

Customer Service Reliability Program

The BPA Customer Service Reliability Program (CSRP) is working to continue to provide its customers with a quick read into the world of BPA and the impacts it may have for them. For us, it is a way to showcase and highlight some areas of focus.

2019 has proved to, as always, be a busy year for us. The Transmission Operator (TOP) Services program has continued to flourish and grow with the addition of EWEB and discovering new and smoother ways to provide better service to our customers. The Transmission Planner project is also keeping its focus on providing its pool of customers the best level of service and willingness to help wherever possible.

Both of these programs have been running at full steam, there doesn’t seem to be an end in sight. Contract refresh will begin next year for most of our TOP customers where BPA will take in consideration modifying the contractual template to better fit the needs of our customers and the constant evolving system. We understand that nothing is black and white and there is always room for improvement in places. We started these programs with the best efforts we had and through the process of implementing them, have learned quite a lot. The goal is to make the system as reliable as possible because that is as important to you as it is to us; it takes growth and a willingness to work at being flexible and adaptable.

“Coming together is a beginning. Keeping together is progress. Working together is success.” —Henry Ford

Lorissa Jones
Customer Service Reliability Program Manager
lljones@bpa.gov

Did you know?

The Bonneville Dam took four years to build. In that, it required the manpower of 3,000 workers, with teams operating non-stop eight-hour shifts (24/7 labor). By the Dam’s completion, 26 people had died.
Team Showcase

We are excited to welcome five new Customer Service Engineers (CSE) to the TPC organization. They have come to us from various areas of the West Coast and as far as the East Coast. These new hires will provide a much needed relief to the overloaded CSE’s we currently have. As these engineers settle in, there will be a shuffle in customer assignments but we will look to minimize this as much as possible.

Be on the lookout for possibly a new face or name working with you on future projects. As always, our goal is to provide the highest level of customer service we can. Adding these people to fill out the engineering staff will help greatly with the high volume of workload we experience.

“SECURITY is not complete without U!”

Get Out Your Fingers & Toes

The Bonneville Dam is not only an impressive piece of architecture, it also comes with an even more impressive fish counter. When it comes to fish counting, this Dam doesn’t rely on technology. A single person is responsible for counting all the fish that pass through the Dam. A computer would count fish that circle back twice or if two species were so similar it could only be distinguished properly by a human. During “peak” fish runs, this person could see between 10,000—20,000 fish pass through within the hour.

PRC-006-03 Spotlight
Underfrequency Load Shedding Program (UFLS)

Back in 1996 there were WECC-wide disturbances that resulted in a complete review of existing UFLS programs. An under-frequency event is not a localized issue, and would be felt system-wide. This program is the last automatic protection scheme to arrest system frequency decline after a disturbance that results in loss of generation resulting in load imbalance.

The immediate problem is to quickly attain a balance between generation and load before the decaying frequency causes additional tripping of the remaining generation. Automatic UFLS provides a quick and effective means for attaining the generation-load balance and for restoring system frequency to normal. This program was installed as a safety net to prevent the total collapse of the Bulk Electric System (BES) during an under frequency event.

Early in the beginning of BPA’s UFLS program, many customers had UFLS relays in their substations. Over the years, BPA has moved relay positions upstream at BPA substation breaker positions allowing many smaller customers to be free of UFLS compliance requirements. Today BPA has over 100 UFLS relay positions that are capable of shedding over 3,000 MW of load that are preset to drop increments of load at specific frequencies as part of the Northwest Power Pool (NWPP) coordinated plan.

Interphase spacing on a 500 kV line in Butte Montana.

Grand Coulee 500 kV Switchyard
BPA’s Annual Data Exchange Highlight

BPA as a Planning Coordinator is required to maintain consistent modeling data for footprint specific to the WECC region case process. Each year BPA requests various functional entities to submit data in support to the development of power flow and dynamics simulation base case models that realistically simulate steady state and dynamic behavior of the transmission system. The standard that requires the need for gathering this data is the Data for Power System Modeling and Analysis (MOD-032-1).

Renamed by BPA as the Annual Data Exchange (ADE), there has been an ongoing effort to merge similar data requests BPA puts out in hopes to prevent frustration and streamline the data collection processes for customers. This annual request has grown over time to include other NERC standards, including but not limited to, MOD-025/026/027, FAC-008, and PRC-023.

The data received is used in a variety of areas within BPA, including real-time studies and decisions on the grid operations floor. Other areas of note include System Operating Limit (SOL) calculations used to set path ratings, Available and Estimated Transfer Capability (ATC and ETC), and a wide range of planning studies. It is imperative BPA has the most accurate and up-to-date data possible so the reliability of the transmission system is not impacted. This data is also vital to BPA when it comes to decisions on how to budget and prioritize projects.
BPA’s External Representative Reporting Project

BPA launched a project approximately two years ago to ensure appropriate internal collaboration was occurring with our many External Representatives. BPA has over 50 representatives across NERC, WECC, NATF, WICF, and RC West. BPA is uniquely situated in that not only do our representatives work to shape policies, processes, strategic plans, and standards from the Bonneville perspective, those same representatives are always on the watch for how those will impact the region and our customers.

Standards Brief

Transmission System Planned Performance for Geomagnetic Disturbance Events (TPL-007) R5 and R9 require BPA to provide Geomagnetic Induced Current (GIC) flow information to any Transmission Owner (TO) or Generation Owner (GO) that owns an applicable BES power transformer in BPA’s Planning Area. Those notifications will need to be sent out prior to January 01, 2020. BPA does not expect to have many entities that qualify as there was only one applicable transformer listed last year and it was owned by BPA. CSRP will be sending out a notification, providing a GIC flow value to those that do qualify and a notification to those that did not have qualifying assets. BPA will not have this analysis concluded until the end of this month. Look for this notification to hit your inbox soon.

Did you know?

The Bonneville Dam’s 21 generators make enough electricity to power over 900,000 homes.

RC West Transition

A journey that began nearly two years ago has finally come to fruition this month when Bonneville and other entities in the Western Interconnection transitioned to RC West for Reliability Coordinator services. RC West began operations as a Reliability Coordinator for California and Northern Mexico in July of 2019. Ultimately, by the end of the year, there will be four Reliability Coordinators in the Western Interconnection; Alberta Electric System Operator (AESO), RC West (operated by the California Independent System Operator (CAISO)), BC Hydro, and the Southwest Power Pool (SPP).

The role of RC uses real time data to monitor and predict the operation of the grid to direct corrective actions when necessary to ensure stability of the grid and reduce the risk for power outages. Bonneville has been heavily engaged with RC West since its inception, along with others participating in numerous working groups and “shadow operations” to help ensure reliable operations. The transition is part of a grid modernization project undertaken by a large team of more than 100 employees from across the agency. The team addressed new technological requirements, data integrations and process changes, as well as necessary communication and training for operators and others to interface with the new RC.

RC West now provides oversight of the electric grid reliability for 41 balancing authorities and transmission operators across 14 western states and northern Mexico. With the addition of RC West’s expanded footprint on November 1, the RC will now account for the reliability of 87% of the load in the western United States making it the largest reliability coordinator service provider in the western U.S.

Not only will this transition better offer stronger reliability to the grid, it will help save time and money while BPA moves towards the Western Energy Imbalance Market (EIM) which is administered by both RC West and CAISO. If you would like to learn more on BPA’s travels to the EIM, Click Here.
Annual System Review (ASR)

The Annual System Review (ASR) project is an ongoing analysis of standards that are applicable to BPA and our registered customers. BPA sends out letters to its customers whom share a "handshake" (customer to BPA) relationship to help aid in self-certifications and audit efforts. This helps improve business practices within BPA by centralizing and consolidating over 850 NERC Reliability Standards. The ASR is a service provided by the CSRP team at no additional cost to the customer. BPA does not assume any compliance responsibility on behalf of the customers who execute ASR letters unless BPA has a separate signed Agreement in place. The customer remains the registered and responsible party for the standards that are applicable to their function. CSRP will send out anywhere from 30-50 letters to various entities through out the region at the beginning of every year. Watch for one of those to hit your inbox in the next few months if it applies.

Did you know?

The Bonneville Dam is a half-mile long and about 200-ft high. The first powerhouse sees 96,667 gallons of water per second. That is enough to fill a three bedroom house in just one second.

Who Are You Going To Call?

All Emails that involve customers and our role as CSRP flow through our CSReliabilityProgram@bpa.gov also known as CSRP@bpa.gov email box. On average the inbox receives roughly 10,000 emails a year and serves as the front door for communications between customers and BPA and also between BPA internal employees and the CSRP staff for assistance with customer compliance issues. These emails could range anywhere from a simple question, to notifications to and from customers, or compliance related documentations. It ensures that inquiries have a central receiving point such that they can be effectively assigned to the correct person to ensure our customer’s needs are met swiftly. Our process is broken down into eight categories and each CSRP team member is assigned the task to follow-up and process the request/question. If you are ever unsure who at BPA to talk to regarding a compliance related matter, the CSRP team will always make sure you are answered and follow-up on with the appropriate person from BPA.
Can You Identify?

Below are five pictures of various pieces of substation outdoor equipment. Can you identify which picture belongs to what name?

1. **Capacitor Bank**
2. **Substation Bus**
3. **Disconnect Switch**
4. **Power Circuit Breaker**
5. **Power Transformer**

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<thead>
<tr>
<th>Picture</th>
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<tbody>
<tr>
<td>A</td>
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<td>B</td>
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<td>E</td>
<td>Power Transformer</td>
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**Picture Credit:**

- **BPA Tower:**
  - Megan Walden — CSRP team
  - Grand Coulee 500 kV:
    - Jay Largo — BPA Engineer
  - Wind Turbine
  - Rob Meyers — Substation Operator

- **Interphase 500 kV:**
  - James Morrow — BPA Lineman Apprentice
  - Hills Creek Rebuild:
    - Tom Girouard — BPA Lineman

Incredible shots, thank you!