RP3 Application 2014

I. RELIABILITY
II. SAFETY
III. WORKFORCE DEVELOPMENT
IV. SYSTEM IMPROVEMENT

Note: For copies of any of the attachments referenced in the application please contact Diane Schlekewey at (509) 582-1258.
1. What method(s) does your utility use to monitor and track reliability data?

- □ Hand calculations – (attach sample)
- □ APPA’s eReliability Tracker Program
- ☒ Alternate software program – (attach sample screenshot)
- ☒ Other method

If other, describe in detail the process your utility uses and/or attach a screenshot (attach additional page(s) if more space is needed):

*Benton PUD uses Schneider Electric’s Responder software for outage management as well as a combination of Responder Archive Explorer Reports and excel spreadsheets to monitor and track reliability data. The Responder one-month report data is entered into a spreadsheet to allow for additional analysis and graphing of data to support the quarterly performance measure (PM) reporting.*

- **Location of attachment(s):** Reliability A.1a Responder Archive Explorer Report (screenshot). Reliability A.1b Responder Archive Explorer example. Reliability A.1c Reliability Performance Measure spreadsheet sample.

2. Use check boxes below to indicate each reliability statistic tracked by your utility and provide the most recent year’s calculation (**January 1, 2013 – December 31, 2013**). Please list the preferred time period of measure for each index below. If your utility uses a different time period or method of calculating the index, explain in the area below. Refer to the Institute of Electrical and Electronics Engineers (IEEE) 1366 standard for more information on reliability statistics. Also indicate your organization’s goals/targets for each tracked index:

<table>
<thead>
<tr>
<th>Index</th>
<th>Value of Index</th>
<th>Units Associated with Index</th>
<th>Utility Goal/Target</th>
<th>Preferred Time Period of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXAMPLE</strong></td>
<td><strong>SAIDI</strong></td>
<td>102.52</td>
<td>minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>☒</td>
<td><strong>SAIDI</strong></td>
<td>53.4</td>
<td>minutes</td>
<td>60 minutes</td>
</tr>
<tr>
<td>☒</td>
<td><strong>CAIDI</strong></td>
<td>147.5</td>
<td>minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>☐</td>
<td><strong>ASAI</strong></td>
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<tr>
<td>☐</td>
<td><strong>MAIFI</strong></td>
<td></td>
<td>interruptions</td>
<td></td>
</tr>
<tr>
<td>☒</td>
<td><strong>SAIFI</strong></td>
<td>0.36</td>
<td>interruptions</td>
<td>0.5</td>
</tr>
<tr>
<td>☐</td>
<td><strong>OTHER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Location of attachment(s):** Reliability A.2 Quarterly Performance Measure – Reliability Indices.
B – Reliability Indices Use

1. Does your utility use service reliability indices to maintain and improve utility operations?

☒ Yes
☐ No

If yes, how is your utility using service reliability indices to improve the system?

**NOTE:** Leading practice is to use at least four of the methods listed below.

Check all that apply:

☒ Worst performing circuit identification
☒ Vegetation management (e.g., tree trimming)
☐ Install covered wire
☒ Distribution circuit inspection program
☐ Convert overhead to underground
☒ Install lightning arresters
☒ Install animal/squirrel guards
☒ Perform thermographic circuit inspections
☐ Perform transformer load management
☐ Economic development
☒ Send indices to Public Utilities Commission/City Council/Governing Board
☒ Produce publicly available report
☐ Underground cable replacements/injections and testing
☐ Other (please describe): ________

*Benton PUD uses Crystal Reports to identify areas for improvement from outage data. Reports are categorized by cause, by region, and by feeder. Quarterly Performance Measures (see Reliability A.2) are presented to Commission and made available on our website for the public.*

- **Location of attachment(s):** Reliability B.1a Performance Measure – Electric System Outages, Reliability B.1b Outage Count by Cause, Reliability B.1c Outage Count by Region, Reliability B.1d Reliability by Feeder.

2. Does your utility participate in a reliability survey or service to benchmark reliability indices?

☒ Yes
☐ No

If yes, identify the type of reliability survey your utility participates in (check all that apply):

☒ Our utility participates in APPA’s biennial Distribution System Reliability & Operations Survey.

☐ Our utility participates in a survey other than APPA’s, and we have included our survey form as an attachment.

☐ Our utility uses APPA’s eReliability tracking program

*Benton PUD worked with a benchmarking consultant in 2005 to provide reliability indices benchmarks. Currently, Benton PUD refers to the APPA biennial survey data to benchmark reliability indices. Benton PUD participated in the 2009 survey. We also monitor the reliability of Washington State investor owned utilities by referring to the state’s Utility and Transportation Commission’s website and the Annual Reliability Reports.*

*Benton PUD is evaluating signing up for the APPA eReliability Tracker as an additional means of indexing against other utilities.*
I. Reliability Checklist

Benton PUD participated in APPA’s DEED DSTAR – P14-9 Survey on Reliability Best Practice.

- Location of attachment(s): Reliability B.2 DEED DSTAR – P14-9 Survey.

C – Mutual Aid

1. Does your utility participate in a national mutual aid agreement?

☒ Yes, our utility has a signed APPA national mutual aid agreement on file with APPA OR we have attached a signed APPA national mutual aid agreement in this application.¹

☐ No, our utility only participates in our state/joint action agency/regional mutual aid program and has provided a copy of our agreement.

Check all that apply:

☒ State
☐ Regional
☒ Other: Washington Public Utility District Mutual Aid Plan

☐ No, our utility does not participate in a mutual aid agreement.

☐ Other

If other, explain and attach documentation (attach additional page(s) if more space is needed):

In addition to the APPA agreement, Benton PUD has been active for over 40 years in our state’s mutual aid activities. The latest revision of this agreement is dated November 2011, and annually the East/West Superintendent’s group reviews the document, updates rates and contact information.

- Location of attachment(s): Reliability C.1a APPA Mutual Aid Agreement. Reliability C.1b Washington Public Utility District Mutual Aid Plan.

D – Disaster Plan

1. Does your utility have a disaster plan, or does your city have a disaster plan which includes an electric utility specific section? Disaster plans should include detailed information on how utility personnel should proceed in a disaster.

☒ Yes
☐ No
☐ We are in the process of developing a plan

If yes, please indicate below when your utility’s disaster plan was last revised or reviewed. A utility should review or revise their disaster plan on an annual basis.

☒ 0-1 years ago
☐ 1-3 years ago
☐ Over 3 years ago

If yes or in development, attach an executive summary, table of contents, or the completed portions of the draft from your utility’s disaster plan.

¹ Copy of APPA Mutual Aid Agreement form is included in RP3 Application materials.
I. Reliability Checklist 25%

Benton PUD has a written Emergency Response and Restoration Plan that is reviewed and updated annually. Several managers from various departments “own” sections of the plan that require their updates – this provides them the opportunity to discuss with their employees. Also during this annual process, the core restoration team responsible for the plan has a face-to-face meeting where all input is reviewed and disaster scenarios are discussed.

Benton PUD conducted an all hands drill on the plan in 2010 to test our in-house outage queue and triage system. Benton PUD now contracts with a call center for outage call taking that ensures all customer reported outages are logged, and transmitted to Benton PUD’s outage management system for crews dispatch. Our plan is being updated with these significant changes.

Customer Service Representatives have attended Outage Call Taker in-house training to correspond with our outage management system and this training is being repeated in September of this year.

Additionally, several employees have been working on policies that address FEMA requirements which are leading to changes in our plan. Resolution No. 2264 was adopted by our Commission to provide staff procedures for procurement of certain materials, equipment, supplies, services, public works, and personal services in the event of an emergency.

Key Operations personnel have attended statewide emergency response training and participated in statewide outage drills and we continue to coordinate with Washington State Department of Commerce Energy Emergencies and Security Program.

- Location of attachment(s): Reliability D.1a Emergency Response and Restoration Plan Executive Summary. Reliability D.1b Resolution No. 2264. Reliability D.1c Washington State Department of Commerce contact form.

E – Physical Infrastructure and Cyber Security

1. Has your city/utility addressed physical infrastructure security needs for your system?

☒ Yes
☐ No

If yes, check the boxes below to indicate what protective measures your utility has taken in the area of physical infrastructure security.

Check all that apply:
☒ Fences
☒ Surveillance
☒ Locks
☒ Patrols
☒ Controlled/monitored access to substations or other secure areas (data cards, RFID system, ID cards, etc.)
☒ Background checks
☒ Security awareness and training for employees
☒ Identified assets requiring enhanced security
☐ Other

If other, describe the process your utility uses
(Attach additional page(s) if more space is needed):

All Benton PUD facilities are enclosed with seven foot chain link fencing with three strands of barbed wire on the top. All facilities have slide gates or man gates with padlocks only accessible by Benton PUD employees. The power gates are controlled with proxy cards that are managed by Win Pac security system.

Each of Benton PUD’s microwave sites are equipped exterior cameras and video recorders. Standard fence and locks along with an offsite third-party monitoring
of the entrances of the buildings are installed. Access to these buildings is granted by application and a specific key is assigned to that person. There is a process in place that requires each of these people, upon entering the building, to call our third-party security monitoring company and identify themselves by name and date of birth in order to disarm the alarm system.

All Benton PUD buildings have security systems that are monitored by a third-party 24 hours per day. Operations and Prosser facilities have outside surveillance cameras that record activity. The Administration facility has outside cameras monitoring the payment drop box and cameras located inside the building where there could be a robbery.

Locks are a six-pin Best Lock system unique to Benton PUD. Keys are issued to employees that require them and are tracked with Keystone 600 software system. Audits on key assignments are completed periodically. Most employees are provided access to their primary work facility with the use of an employee badge that can be activated and deactivated electronically through Assured ID software system.

Security patrols are completed on an as needed basis that may be triggered by an increase in robberies in the area, during remodeling of buildings, or as a result of reports of suspicious activities in the area. Our maintenance department completes a daily patrol of our campus perimeter.

All Benton PUD substations have a seven foot chain link fence with three strands of barb wire on the top. These are locked gates and each substation is inspected at least once per month. All substations are monitored using our SCADA system. Security lights are in place at all stations.


2. Cyber Security

a. Has your utility developed a formal cyber security policy for the organization?

☐ Yes
☐ No

If yes, please check the boxes below to indicate the areas the policy addresses.

Check all that apply:

☐ Use of passwords and changing default passwords
☐ System monitoring and access control
☐ Encryption
☐ Restricting foreign devise use (e.g., non-company owned USB)
☐ Secure communications paths
☐ Firewalls
☐ Other

If other, describe the process your utility uses

(Attach additional page(s) if more space is needed):

Benton PUD’s Commission adopted Resolution No. 2260 recognizing the importance of establishing an Information Technology Security Policy and directing the General Manager to develop subordinate directives and procedures consistent with it to address appropriate areas of IT operations and security. This resolution also requires the General Manager to provide the Commission with an annual update on Benton PUD’s information technology security position.

Administration Directive No. 25 – Information Technology Security was approved after substantial effort to revise the previous existing policy. This Directive establishes the guidelines and defines a set of security requirements to create and maintain a secure environment to achieve our security objectives.

Benton PUD’s IT Management developed an IT Administrative Policy Framework that identifies the specific policies and procedures to comply with the
I. Reliability Checklist  

requirements of Administration Directive No. 25 and to ensure that IT processes are sustainable, repeatable, and receive the appropriate level of focus for the organization. Currently, 31 such documents have been identified, 16 have been approved, eight have been written and are in the process of approval, and seven are in preliminary stages of development.

Information Technology DP No. 2 – Security Incident Reporting and Response: Chain of Custody procedures ensures evidence gathered as part of a security incident investigation is documented and tracked per specified requirements.

Information Technology IDP No. 4 – IT Security Governance defines our governance framework that will direct, control, and manage IT security. This policy includes outlining the role and responsibilities of the Information Security Officer and establishes the IT Steering Committee. The IT Steering Committee is comprised of Leadership Team members, IT management staff and selected application system owners meet on a regular basis to approve projects, scope, schedules, budgets, priorities, and technology roadmaps.

Information Technology IDP No. 5 – Information Use provides guidance on accessing, monitoring, reviewing, distributing, protecting, and sharing information assets in order to support confidentiality, integrity, and availability in accordance with applicable laws and regulations.

Information Technology IDP No. 8 – IT Physical and Environmental Security establishes adequate physical security and environmental controls which are a necessary and important step in achieving a safe and secure computing environment.

Information Technology IDP No. 9 – Acceptable Use of Information Assets outlines the requirements to protect the employee and Benton PUD. Inappropriate use of these information assets exposes Benton PUD to risks including malicious attacks, viruses, compromise of network systems and services, and legal issues.

Information Technology IDP No. 10 – Operational Management provides for security-related requirements for the operation and maintenance of Benton PUD’s computing environment. The policy establishes a set of procedures to deploy, update, patch, backup, and audit PUD hardware and software systems.

Information Technology IDP No. 11 – Access Control was written to preserve the properties of confidentiality, integrity, and availability Benton PUD’s information assets by establishing the logical and physical access control mechanisms commensurate with the value and sensitivity of the assets.

- **Location of attachment(s):** Reliability E.2a Resolution No. 2260- Information Technology Security Policy, Administration Directive No. 25 – Information Technology Security, IT Administrative Policy Framework, IT DP No. 2 – Security Incident Reporting and Response, IT IDP No. 4 – IT Security Governance, IT IDP No. 5 – Information Use, IT IDP No. 8 – IT Physical and Environmental Security, IT IDP No. 9 – Acceptable Use of Information Assets, and IT IDP No. 10 – Operational Management, IT IDP No. 11 – Access Control.

b. Does your utility require cyber security awareness training for employees?

☐ Yes
☐ No

Benton PUD’s Cyber Security Awareness Program consists of a mandatory face-to-face meeting where IT staff presents the realistic cyber threats, need for and types of cyber security awareness and counter measures, review of all applicable cyber security policies, and instruction on how to view the required video-based sustainment training. Benton PUD has purchased and configured an online Virtual Learning Environment training system from SANS Institute and uses this to conduct quarterly cyber security training (using NERC CIP-004-3 R1 and R2 as guidelines). Training is tracked within the online administration system and monitored through an IT department performance measure.

All employees, commissioners, contractors, part-time and temporary workers, and those employed by others to perform work on Benton PUD premises, or who
have been granted access to Benton PUD information or systems, are covered by our policy and must comply with the associated guidelines and procedures.

- **Location of attachment(s):** Reliability E.2b IT IDP No. 6 – Information Technology Security Awareness Program, Initial Training Session Sign In, Online Training 1st Quarter Sign In.

c. Does your utility conduct periodic cyber security assessments of its system? This assessment would involve looking at security gaps in network-connected devices.

- [ ] Yes
- [ ] No

Administrative Directive No. 51 – Configuration and Change Management for Computer-Based Hardware and Software establishes the requirements for developing and maintaining the processes needed to ensure discipline is applied to the deployment and operation of Benton PUD’s computer-based hardware and software components and systems. Information Technology IDP No. 1 Enterprise Software System Configuration and Change Management was written to ensure the proper methods and tools are used to identify and control enterprise software systems changes throughout their lifecycle.

In 2014, Benton PUD created IT IDP No. 10 – Operational Management Policy (see Reliability E.2a), which requires network vulnerability and security penetration testing every year (by internal staff) and every three years (by an external security auditor/penetration tester). Benton PUD conducted external audits/network vulnerability audits in 2006, 2009, and 2012. Benton PUD conducted its first internal assessment in May 2014.

Additionally, as part of our annual external financial audit process, Benton PUD added a responsibility for auditing IT Security practices, process, and policies. In 2012 and 2013, Benton PUD used the services of Moss Adams, LLP to review these IT functions and make recommendations to improve our IT Security posture.

IT DP No. 1 – Patch Management – IT Infrastructure establishes the standard procedures for the identification of security vulnerabilities, potential areas of functionality enhancements as well as the safe and timely installation of software patches.

IT IDP No. 7 – Security Incident reporting and Response establishes guidelines for the identification, response, reporting, documentation and assessment of information security-related incidents.

If **yes**, what is the schedule for assessments of your system? A utility should conduct these assessments annually and when new systems are implemented.

Check all that apply:

- [ ] Every year (annually)
- [ ] Every 1-3 years
- [x] When new systems are implemented
- [ ] Other (please explain): **Enterprise Risk Management Program**

*Benton PUD has established a comprehensive Enterprise Risk Management Program where the top 25 risks are categorized as either Hazard, Operational, Strategic, Financial, or Compliance and Legal. Each risk is defined on a Risk Response form, rated for both probability and controllability and responses to the risk with corresponding action items are developed, implemented and tracked. Cyber Security is one of the top seven focus risks for 2014.*
## I. Reliability Checklist

- **Location of attachment(s):** 
  - Reliability E.2c
  - Administration Directive No. 51 – Configuration and Change Management for Computer-Based Hardware and Software
  - IT IDP No. 1 – Enterprise Software System Configuration and Change Management Program
  - IT DP No. 1 – Patch Management – IT Infrastructure
  - IT IDP No. 7 – Security Incident Reporting and Response
  - Benton PUD Enterprise Risk Management Risk Response Form: Cyber Security Attack

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Submitted By: **Stephen Hunter**

Signature: 

Title: **Assistant General Manager – Director of Operations**

Utility Name: **Benton PUD**
A – Safety Manual

1. Does your utility use a safety manual?

☐ Yes
☐ No

If yes, please choose below:

☐ Our utility uses APPA’s Safety Manual

- Which edition of APPA’s Safety Manual is your utility currently using?
  (Edition number)

  NOTE: Leading practice is to use the most updated edition, which is currently the 15th Edition.

☐ Our utility uses a safety manual developed in-house

  NOTE: Attach copy of the table of contents and executive summary for RP3 Panel review

- When was your utility’s safety manual last revised or reviewed?
  A full revision of Benton PUD’s Safety Manual was completed in September 2014.

  This date must be clearly shown on any documentation you provide

  NOTE: Leading practice is to revise or review the safety manual at least every five years.

Benton PUD’s Safety Manual was originally written with input from five area electric utilities that work cooperatively on safety training. The manual was further approved by the Washington State Division of Occupational Safety and Health (DOSH).

The manual is reviewed on a periodic basis with updated information added and obsolete information removed. An example of a recent revision was Heat Related Illnesses added in 2008 as a result of a new requirement by DOSH. Significant changes were made in 2014 as a result of changes in the Federal laws.

The utilities that work cooperatively on safety training meet quarterly to discuss proposed and expected changes to safety regulations for Washington State.

Additionally, Benton PUD participates in the Electrical Utility Safety Advisory Committee (EUSAC). EUSAC is an advisory committee comprised of representatives from IBEW, Washington State utilities, utility contractors, and Washington State Department of Labor and Industries (L&I). The mission of EUSAC is to promote the safety and health of the electrical worker and the public through communication, with consensus recommendations made to L&I.

☐ Our utility uses another safety manual or innovative approach

  NOTE: Attach copy of the table of contents and the executive summary and/or documentation of your utility’s innovative approach for RP3 Panel review. Date of any updates/reviews should be clear.

- Location of attachment(s): Safety A.1a Utilities Safety Manual Table of Contents. Safety A.1b EUSAC meeting minutes from May 13 and August 12, 2014.
II. Safety Checklist

2. Are all utility employees directed by utility management to use, read, and understand the designated safety manual?

☑ Yes
☒ No

If yes, please provide documentation of directive. Examples of a directive include minutes from a city/utility board meeting, a copy of a formal memo issued to all employees, a copy of an e-mail sent to all employees from utility management (such as General Manager), etc.

**NOTE**: A signed front page of a safety manual does not constitute a formal directive to all employees to use the safety manual, and will not be considered as documentation of a directive.

For an example of a safety directive please see Application Guide, Appendix D.

> Benton PUD’s Commission has approved Resolution No. 2290 - Supporting an Environment and Culture of Safety at Benton PUD and Directing the General Manager to Maintain a Comprehensive Safety Program in order to promote a Healthful and Safe Work Environment.

> Resolution No. 2290 supports the environment and culture of safety at the Benton PUD; recognizes the PUD’s Safety Program; and directs the General Manager to maintain the Safety Manual, ensure it is read and used by all employees, and enforce the safety laws and rules in the Safety Manual.

> The General Manager includes a statement in our employee newsletter, “Thursday News”, which identifies safety as a top priority for our organization, directs employees to review our safety manual, and to be familiar with the areas that apply to their jobs. In addition to hard copy manuals, Benton PUD’s Safety Manual is also located on our Intranet. The Thursday News statement includes a link to the manual and will be published at least annually.

> Benton PUD’s Operations Safety Report has a specific line item to document the section(s) and page(s) of the safety manual that are reviewed during these meetings. The Safety Committee includes a set of questions about the topic for the crews to discuss and answer. The safety reports are completed monthly by each line crew, service crew, meter shop, transformer shop, auto shop, and warehouse/maintenance shop.

> Benton PUD’s Operations Supervisor’s New Employee Orientation Guide specifies discussion of safety rules and expectations, location of safety related forms and equipment, review of safety related directives such as the Fire Alarm Procedure, and requires a sign-off confirming the employee’s safety orientation was completed.


If yes, does your utility formally discuss the manual with employees on an annual (or more frequent) basis and when a new revision is published?

**NOTE**: This review can be a special meeting, or part of a regular safety meeting.

☑ Yes
☒ No
B – Safe Work Practices

1. Does your utility conduct regular safety meetings for electric employees?

☐ Yes
☐ No

If yes, how often are the meetings held?

NOTE: Leading practice for meeting frequency and duration has been established as at least one hour per month for operations/field employees, and one hour per quarter for management/administrative/other employees.

NOTE: Please indicate the frequency and duration (minutes/hours) of meetings for operations/field and management/administrative employees. (Job briefings, such as tailboard discussions, are not considered safety meetings for the purpose of this question.)

Operations/Field Employees

Check all that apply, and indicate duration:

☐ Daily (Duration: __________)
☐ Monthly (Duration: Typically 2 hours – First Aid/CPR/AED annual refresher is 4 hours)
☐ Quarterly (Duration: __________)
☐ Semi-Annually (Duration: __________)
☐ Other (please explain)

Operations employees meet at least twice per month and those on Safety Committee meet three times per month. Crews and Shops (Meter, Transformer, Auto, and Warehouse/Maintenance) conduct monthly meetings and use the form designated Crew Safety Report (see Safety A.2c).

Following these sessions, the Safety Committee, which is comprised of employee representatives from each area and employer representatives, meet and review reports, accidents and actions.

After the Safety Committee meets, there is an all-hands general safety meeting where the safety committee minutes are reviewed and the training topic for the month is presented and discussed.

Management/Administrative/Other Employees

Check all that apply, and indicate duration:

☐ Daily (Duration: __________)
☐ Monthly (Duration: __________)
☐ Quarterly (Duration: 30-60 minutes)
☐ Semi-Annually (Duration: 1 – 2 hours)
☐ Other (please explain)

Administrative employees hold quarterly departmental meetings and meet annually for a general safety training session. The Safety Committee is comprised of employee and employer representatives. Along with quarterly meetings, these representatives meet an additional four times per year to discuss departmental reports, accidents and actions.

1 Safety meetings for management/administrative/other employees could include topics such as office safety, ergonomics and wellness, lifting heavy objects, general electronics safety, etc.
II. Safety Checklist

Administrative Directive No. 47: District Safety Program Structure and Reporting Procedures details how committees are organized, the membership, requirements, and reporting and investigating accidents and near miss/close call reports.

Please attach sample attendee lists for operations/field employees and management/administrative employees from safety meetings along with an agenda or outline and any handouts or materials for those meetings.


2. Does your utility have a written policy or practice to enforce its safety rules, including conducting monthly (or more often) job site safety inspections?

☐ Yes

☐ No

If yes, please include a copy of your utility’s policy/practice and job site inspection form.

Benton PUD has a practice to conduct, at a minimum, two unannounced crew visits per year, two safety inspections of Operations facilities per year, and two safety inspections of Administration facilities per year. These inspections are completed by the Director of Operations and the Safety Coordinator.

This practice ensures each crew is visited twice throughout the year. We have nine field crews; six line, two transformer, and one meter. The warehouse, maintenance and auto shop crews are inspected during the Operations facility assessments. This totals a minimum of 20 crew visits per year.

Additional crew visits are conducted by the Superintendent of Transmission and Distribution as needed or to oversee certain jobs.

Benton PUD does have written disciplinary policies that mention attention to safety and include progressive disciplinary measures. Discipline for safety infractions is administered following a complete investigation of any accidents, near misses, or as a result of a job site visit. This practice assures due process, facilitates open and transparent communications during investigations, and also allows for flexibility in determining appropriate disciplinary action.

In 2013, Benton PUD voluntarily took the opportunity to have John Carroll, Washington State Department of Labor and Industries Safety Consultant, on site to conduct an evaluation of our safety and health program. This evaluation included an inspection of the entire Operations facility for the purpose of identifying any hazards defined as serious or general. Benton PUD was provided a report that included information on the potential effects of any identified hazards and recommended actions to correct. We corrected all identified hazards and submitted a certification documenting these corrections.

II. Safety Checklist 25%

3. Does your utility require documented job briefings for electric employees?

☑ Yes
☐ No

If yes, please provide a sample job briefing template.

Benton PUD documents job briefings in two ways – on timesheets for the Line Department and on job briefing forms for the Transformer Shop.

Benton PUD is currently evaluating additional job briefing templates.

- Location of attachment(s): Safety B.3a Timesheet. Safety B.3b Job Briefing Form.

4. Does your utility have a practice or procedure to conduct a safety orientation with all non-utility employees (e.g., contractors, mutual aid situations) working on your system to ensure compliance with your utility’s safety standards?

☑ Yes
☐ No

If yes, please provide an example².

Benton PUD has an Emergency Response and Restoration Plan that includes specific briefing information for all mutual aid crews. These meetings would always be face-to-face and before any crew would work on our property. Mutual aid crews are also assigned a field representative (a Benton PUD employee) to act as a coordinator during restoration.

All contractors are required to fill out an application to be designated as a prequalified bidder. This application form requires that all businesses performing work are high voltage qualified and meet other safety requirements.

- Location of attachment(s): Safety B.4a Excerpt from Emergency Response and Restoration - Mutual Aid Crews. Safety B.4b Contractor Pre-Qualification Form.

5. Does your utility change its safety practices/rules or takes action to promote safety based on findings from accident investigations or near-miss reports when appropriate? (i.e. email to all staff to promote caution from a previous accident, changing a policy to reflect the accident, etc.)

☑ Yes (Please attach, or email, a sample copy of a report form.)
☐ No (Our utility does not change its safety practices/rules based on the findings OR our utility does not conduct accident investigations or near miss reports.)

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² Examples of this practice or procedure may range from a mutual aid safety briefing to an email document distributed prior to working on a neighboring system, or contract language designed to ensure compliance with utility safety rules. Leading practice would include an in-person meeting at some point during the process.
If yes, provide examples of the changes made based on investigation (Attach additional page(s) if more space is needed.)

Benton PUD’s Accident Investigation Form includes a section to review policies and practices. Summaries of all Operations investigations are shared in Operation’s Safety Committee and General Safety meetings to discuss any findings or changes and ensure practices are understood. An example of a change in our safe work practices occurred after completing a report on a near miss in an electrical vault. This incident prompted staff to change the procedure when entering a vault with energized parts; now circuits are placed on non-reclose before entering.

Summaries of all investigations for Administrative employees are shared in Administration Safety Committee meetings. An example of an action taken by the Administration Safety Committee based on an employee report was to install additional parking lot lights. While existing lighting met code minimums, this action was prioritized by Benton PUD.

The safety policy, Administrative Directive No. 47: District Safety Program Structure and Reporting Procedures – (see Safety B.1a) – outlines the reporting and investigating requirements.

In addition, Benton PUD most recently has undertaken a complete review of our safety program and culture based on an accident resulting in a third-party injury. This review is being conducted by a nationally recognized expert in the industry and is expected to be completed by the end of the year.

- **Location of attachment(s):** Safety B.5a Accident Investigation Form. Safety B.5b Employee Injury and Illness Report.

6. Does senior management actively participate in the utility’s safety training initiatives for all employees at least once per year?

- [ ] Yes
- [ ] No

If yes, specify all levels of involvement by checking the relevant box(es) below:

- [ ] Electric Superintendent
- [ ] Management or department head
- [ ] Human Resources
- [ ] Operations & Maintenance
- [ ] Other (Please list.): One member of Leadership Team and Administrative Management rotates on the Administration Office Safety Committee (see Safety B.1d).

- **Location of attachment(s):** n/a

7. Does your utility provide annual refresher training for OSHA-type issues?

   **NOTE:** Leading practice is for a utility to provide at least four types of training each year.

- [ ] Yes
- [ ] No
II. Safety Checklist 25%

If yes, specify all types of training by checking the relevant box(es) below:

- Bucket-truck rescue
- Confined space rescue/permit required confined spaces
- CPR/AED
- Cranes/Derricks
- Hazardous Energy Control / Lockout/Tagout
- HazMat
- Job briefing
- Ladder safety
- Lock-out/Tag-out
- Pole-top rescue
- Enclosed spaces and working underground
- Underground electric transmission and distribution work
- Hazard recognition in trenching and shoring
- Other (Please list.): Sabotage Recognition, Heat Stress, Fire Extinguishers, Rigging, Load Securement, and Safety Data Sheets.

- Location of attachment(s): n/a

8. Does your utility provide Automated External Defibrillators (AEDs) at all work site locations?

NOTE: “At all work site locations” means immediately available in any work site environment, from an office setting to a field job site; if employees are working at a site in the field, there must be an AED present.

- Yes
- No

If yes, please describe how the utility ensures that AEDs are available when needed.

All crews have AEDs assigned to them and there is an AED in each building for a total of 17 units. Medical oversight is provided by a local Emergency Room physician. Benton PUD assigns each unit to an “owner” who is responsible for checking the unit. The Crew Safety Report (see Safety A.2c) requires each crew and shop to check their AEDs monthly. All AEDs are brought in for our annual First Aid/CPR/AED refresher class in December for a full check.

- Location of attachment(s): Safety B.8 Early Defibrillation Response Team Roster.

9. Has your utility performed an arc hazard assessment, per National Electrical Safety Code (NESC) requirements?

- Yes
- No

If yes, has your utility notified and trained all affected employees regarding the arc hazard requirements for each type of job?

- Yes
- No

- Location of attachment(s): n/a
10. Does your utility conduct disaster drills that are electric-utility specific?

- [x] Yes
- [ ] No

If yes, indicate which drill(s) were conducted and when the drill(s) were conducted in 2012, 2013, 2014, where applicable. A utility should conduct at least one drill per year on at least an annual basis (a minimum of one drill per year each year).

**NOTE:** Attach a description of the procedures for each drill.

An actual event can qualify as a “drill” only if the utility determined lessons learned from the event. Please provide documentation.

<table>
<thead>
<tr>
<th>Drill Type</th>
<th>Drill Type: Table Top(T), Field(F), or Both(B)</th>
<th>Dates of 2012 Drills Performed</th>
<th>Dates of 2013 Drills Performed</th>
<th>Dates of 2014 Drills Performed</th>
<th>Location (page/tab) of descriptive attachment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake</td>
<td>☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>☑</td>
<td>06.28.2012</td>
<td></td>
<td>2014: to be scheduled</td>
<td>Safety B.10a</td>
</tr>
<tr>
<td>Flood</td>
<td>☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hurricane</td>
<td>☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snow/Ice Storm</td>
<td>☑</td>
<td>12.05.2012</td>
<td>12.05.2013</td>
<td>2014: Dec</td>
<td>Safety B.10b</td>
</tr>
<tr>
<td>Tornado</td>
<td>☐</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Please list.): Wind Storm/Overall planning; Workplace Violence</td>
<td>☑</td>
<td>12.05.2012</td>
<td>12.05.2013</td>
<td>2014: Dec 02.23.2014 EUCI 02.14.2014</td>
<td>Safety B.10b, B.10d, B.10e, and B.10f</td>
</tr>
</tbody>
</table>

C – Benchmarking

1. Does your utility participate in safety index benchmarking?
   - Yes
   - No

   If yes, please indicate the ways in which your utility benchmarks/participates:
   - APPA’s Safety Awards of Excellence
   - OSHA 300 form (please attach form)
   - Other (please explain)

   Benton PUD calculates our incident rate and benchmarks against the Bureau of Labor Statistic data. These reports are shared with our Commission along with many other performance measures quarterly. The last full three year end reports are included.


   If yes, please provide your utility’s incidence rate? 1.97 for first and second quarter 2014

   Incidence Rate = \( \frac{\text{Total number of cases} \times 200,000}{\text{Total Worker hours of exposure}} \)

Submitted By: Stephen Frost
Signature: _________________________________
Title: Utility Safety Coordinator
Utility Name: Benton PUD
III. Work Force Development Checklist 25%

A – Succession Planning and Recruitment

1. Has your utility identified the demographics of its employees to prepare for succession planning?

☒ Yes
☐ No, our utility has not identified the demographics of employees.

If yes, what items does your utility identify for each employee?

☒ Age
☒ Eligibility for retirement
☐ If your utility tracks this, what percent of employees are eligible for retirement within the next 5 years?
☐ Position
☐ Other:

Location of attachment(s): Workforce Development A. 1a Workforce Development A. 1b

2. Has your utility prepared a utility wide succession plan?

☒ Yes, we have prepared a utility wide succession plan.

NOTE: Attach an executive summary or a written explanation of your utility’s succession plan.

If yes, has your utility’s plan been revised or reviewed in the past 3 years?

☒ Yes
☐ No

☐ No, but we are currently developing a succession plan.

NOTE: Include the completed portions of your draft.

☐ No, we do not have a succession plan.

Location of attachment(s): Workforce Development A. 2a Workforce Development A. 2b Workforce Development A. 2c

3. Does your utility have a written procedure or practice for recruitment?

☒ Yes
☐ No

If yes, please include a copy of the recruitment procedure or practice, or explain what type of procedure or practice your utility has for recruitment.

Location of attachment(s): Workforce Development A. 3a Workforce Development A. 3b Workforce Development A. 3c
B – Employee Development & Recognition

1. Does your utility prepare individual employee development plans\(^1\) with professional development goals for electric utility employees?
   
   - [x] Yes
   - [ ] No

   If **yes**, please indicate which category/categories of employees your utility prepares development plans for, and provide a description or attach an example of the development plan(s) for each category. **NOTE:** A utility should have development plans for all employee categories. Annual reviews can fulfill this requirement, as long as the review incorporates defined development plans for employees. **NOTE:** An individual development plan does not need to be an outline for employee promotion within the utility; rather, it should be designed to offer steps for employees to better themselves as individuals and employees.

   - [x] Operations/field employees (including line workers, meter readers, etc.)
   - [x] Management level employees
   - [x] Office personnel (including engineers, administrative, etc.)
   - [ ] Other

   Benton PUD’s total compensation philosophy is integral to establishing Benton PUD as an employer of choice in the community. Benton PUD’s compensation strategy considers both public and private markets (utility and general sectors) in the region from which we compete for qualified employees. Benton PUD’s Total Compensation Philosophy Statement was adopted by Resolution in January 2009. The resolution addresses base salary and benefit programs. Each year the Commission adopts a Salary Administration Plan to further define compensation for non-represented employees. The last Salary Administration Plan was adopted in February 2014. An LOA agreement addresses career paths and ladder and compensation for represented employees. All employees including non-represented and represented participate in the annual employee performance appraisal process.

   **Location of attachment(s):** Workforce Development B.1a Workforce Development B.1b Workforce Development B.1c Workforce Development B.1d Workforce Development B.1e Workforce Development B.1f

2. Does your utility have a standard practice or policy that provides formal recognition\(^2\) of commendable employee performance?
   
   - [x] Yes
   - [ ] No

   If **yes**, please check the type of performance recognition program(s) your utility has established:

   - [x] Letter/Certificate of commendation
   - [ ] Monetary or merchandise incentive program
   - [x] Employee recognition ceremony
   - [ ] Other

---

\(^1\) Please see RP\(_3\) Application Guide for further explanation of a utility employee development plan.

\(^2\) Please see RP\(_3\) Application Guide for further explanation of performance recognition programs.
If yes, please provide a description or attach an example of the type of formal recognition program your utility uses.

Benton PUD recognizes individual employee performance and teamwork as well as completion of large, cross-functional projects, national industry awards and our employee’s commitment to our core values and service to our customers. Recognition takes place in various forms including acknowledgement and/or presentations during our regular Commission meetings or department staff meetings and/or luncheons, an annual employee breakfast and published articles in Thursday News (employee newsletter) or quarterly customer newsletter.

Most recently, Benton PUD, instituted a customer promise - “Delivering our neighbors more than expected” - that has become a part of each and every employee’s day to day philosophy when servicing our customer. To recognize those employees who have gone above and beyond in assisting a customer, whether internal or external, we showcase feedback received from customers or stories of how an employee has delivered our neighbors more than expected. The recognition is presented to the employee during their staff meeting, an article is posted in our weekly employee newsletter and we also create a poster showcasing the success that is posted in the employee’s department to help foster and encourage this behavior from others.

Below are a few other examples of our employee recognition programs:

- Customer Service traveling trophy, awarded by coworkers to acknowledge performance.
- Engineering celebration recognizing those who have earned their degree(s).
- Emails and journaling in our employee performance management system to identify employee performance and recognize during annual performance reviews.
- Informal (thank you) luncheons to recognize employees and their accomplishments.

Location of attachment(s): Workforce Development B.2a Workforce Development B.2b

C – Education, Participation and Service

1. Does your utility have a written education policy, procedure, or program for professional development?
   - [X] Yes
   - [ ] No

If yes, what area(s) does your utility’s policy, procedure or program cover?

   NOTE: Attach a copy of your utility’s written education policy/procedure/program.
   - [X] Tuition/reimbursement for courses, workshops, certificates, and credentials
   - [ ] Internal university/school
   - [ ] Alliance or agreement with an external university/school
   - [X] Other (provide explanation) Apprenticeship Program for Lineman, Meterman, and Station Electrician

If yes, indicate below how your utility communicates its policy/procedure/program.

Check all that apply:
   - [X] E-mail
   - [X] Internal newsletter
   - [ ] Office posting (e.g., to bulletin boards in lunchroom)
   - [ ] Other (provide explanation)
III. Work Force Development Checklist 25%

If yes, how frequently is the policy/procedure/program communicated to employees?

NOTE: A utility should communicate the policy/procedure/program upon hire and regularly throughout the year as well as when changes are made.

Check all that apply:

- Upon hire
- Monthly
- Quarterly
- Annually
- When policy/procedure/program changes
- Other (provide explanation)

Location of attachment(s): Workforce Development C.1a  Workforce Development C.1b  Workforce Development C. 1c  Workforce Development C. 1d

2. Does your utility support networking and personal/professional development by encouraging attendance from all employee groups at a wide variety of continuing education classes, workshops, local/state/national conferences, and attendance/participation in user/interest group meetings?

- Yes
- No

If yes, please indicate which types of networking and personal/professional development activities utility employees were involved in during the last three years (2012, 2013, and 2014) by marking the appropriate boxes in the table below:

<table>
<thead>
<tr>
<th>Classes/Workshops</th>
<th>Management/Administrative</th>
<th>Other (please explain in attachment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Local Conferences</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>State/Regional Conferences</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>National Conferences</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>User/Interest Group Meetings</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>

If yes, please provide a list with a representative sample of networking/personal/professional development and training opportunities attended by employees in different employee groups within the electric utility.

Location of attachment(s): Workforce Development C.2a

3. Does your utility encourage and support active membership in professional and community organizations and service on committees and boards that benefit the utility?

Active membership in professional and community organizations:

- Yes
- No

3 Please refer to the RP3 Application Guide for an explanation of networking opportunities and personal/professional development, as well as examples of continuing education classes, workshops, local/state/national conferences, and user/interest group meetings.
Active service on committees and/or boards:

☒ Yes
☐ No

Attach a representative list of memberships and committees and/or boards your utility employees participated in during the last three years (October 1, 2012-September 30, 2014). Examples of community memberships/committees/boards to list include Chamber of Commerce, Better Business Bureau, Kiwanis, United Way, etc. Examples of professional memberships/committees/boards to list include participation in local chapters or at the national level of organizations such as IEEE, SHRM, NUTSEA, etc., as well as other statewide, regional and national utility-related organizations.

**NOTE:** Include only electric employees and members of your utility’s governing board.

*Benton PUD encourages and supports active membership in professional and community organizations and service on committees and board that benefit the utility. Attached is a representation of Benton PUD employees of memberships on committees and/or boards.*

- **Designation of Representatives:** Employees designated by our Commission to represent and/or act on behalf of Benton PUD on various organizations. This is reviewed, updated, and approved annually.
- **Affiliations List:** Employees involved in civic, industry & business associations, professional associations as well as those who have obtained a professional license or are a notary. Employees on this list submit an explanation of how their memberships benefit Benton PUD. This reviewed, updated and approved annually.
- **Community Involvement:** Benton PUD’s fifteen member Community Involvement / Health & Wellness Committee identifies, promotes and organizes employee involvement in community projects and events. A summary of the involvement is presented to Commission annually.
- **Leadership Tri Cities:** This provides Benton PUD the opportunity to have employee participation in the program to gain exposure to issues that exist in the community, involvement in local affairs and net-working opportunities.

**Location of attachment(s):**

- Workforce Development C.3a
- Workforce Development C.3b
- Workforce Development C.3c
- Workforce Development C.3d

---

Submitted By: Melina Wenner

Signature: __________________________________________

Title: Manager of Human Resources

Utility Name: Benton PUD
A – Research & Development

1. Is your utility a member of a research and development program?

☐ Yes
☐ No

If yes, please identify the specific type of program that your utility participates in and attach proof of membership (with the exception of DEED members).

NOTE: A utility should participate in a national R&D program.

☐ Our utility is a member of APPA’s R&D program, DEED
☐ Our utility is a member of EPRI’s R&D program

Benton PUD is participating in the EPRI Research Portfolio - Integration of Distributed Renewables – Program 174.

Location of attachment(s):  System Improvement A.1a EPRI Integration of Distributed Renewables – Program 174 Program Overview.  System Improvement A.1b Research Portfolio Agreement between EPRI and Benton PUD.  System Improvement A.1c EPRI Membership Dues Invoice for 2014 Q3.

☐ Our utility is a member of our state or regional R&D program
  ▪ Please provide program name: Northwest Energy Efficiency Alliance (NEEA)

Pacific Northwest Smart Grid Demonstration Project (PNWSGDP)

Benton PUD is a sub-recipient of Battelle’s Pacific Northwest Smart Grid Demonstration project (PNWSGDP). Battelle is a recipient of the Department of Energy Funding Opportunity Announcement, which is funded by the American Recovery and Reinvestment Act of 2009. The PNWSGDP is a regional Smart Grid demonstration project to benefit smart grid technology viability, quantify smart grid costs and benefits, and validate new smart grid business models. As our part in the project, Benton PUD has been testing an energy storage and generation device and an Advanced Metering Infrastructure (AMI) meter event tracking system.

Location of attachment(s):  System Improvement A.2a Pacific Northwest Smart Grid Demonstration Project Overview.  System Improvement A.2b Pacific Northwest Smart Grid Demonstration Project 2012 Annual Report.  System Improvement A.2c Pacific Northwest Smart Grid Demonstration Project Agreement between Battelle and Benton PUD.

☐ Other

If other, describe in detail the research and development program your utility participates in (attach additional page if more space is needed):
IV. System Improvement Checklist 25%

If yes, please indicate how your utility participates in research and development program(s).

Check all that apply:

- Currently involved in grants/scholarships (submit summary of project)

Light-Emitting Diode (LED) Feasibility and Implementation Grant
Benton PUD, along with City of Benton City and the Benton Rural Electric Association are working in conjunction with the Washington State Transportation Improvement Board to test the feasibility of Leotek Electronics ECObra-head™ Street Lights. The goal is to implement energy efficient LED lighting that reduces maintenance costs for the City of Benton City while at the same time providing appropriate levels of lighting on public roads.

Location of attachment(s): System Improvement A.3a Notice of Award to Leotek Electronics USA Corp. for City of Benton City Street Lights. System Improvement A.3b ECObra-head Street Light™ specifications.

- Applied for grants/scholarships in past 3 years
- Review of relevant research projects conducted by other utilities, for application to projects your utility is conducting (for example, DEED Project Database, DEED-published documents, or EPRI research papers)
- Use of software or technology developed by a utility research group (for example, GridLAB-D)
- Other (please explain)

Northwest Energy Efficiency Alliance
Benton PUD is a participant of regional pilot programs conducted by the Northwest Energy Efficiency Alliance (NEEA). The pilot programs evaluate the readiness, availability and energy savings of an emerging technology (i.e. CFLs, LEDs, front-loading clothes washers, etc.) and present the results to the Regional Technical Forum (RTF) to support adoption of products, services and practices in the region. Once adopted, these programs are eligible for reimbursement by the Bonneville Power Administration (BPA). As a result, Benton PUD incorporates these products, services and programs into our conservation program and incentivizes customers to adopt such technologies through customer rebates.

Two current pilot programs we are involved in are: Refrigerator Operator Coaching (ROC) and Integrated Heat Pump Water Heaters. ROC is a pilot program offered to industrial customers where instruction is given to cold storage operators on methods to achieve energy savings. Benton PUD has entered into a 5-year contract to offer such a program to our industrial customers. Benton PUD will receive savings achieved by the program. Integrated Heat Pump Water Heaters is testing the operation of such devices in Northern climates. Benton PUD staff was instrumental in testing such technology to identify cost savings.

Location of attachment(s): System Improvement A.4a Energy Smart Industrial Refrigeration Operation Coaching Overview.
B – Energy Conservation and DSM

1. Has your utility implemented any energy conservation, efficiency, demand side distributed management processes or programs?

☑ Yes  ☐ No

If yes, include a description of the key features of your utility’s program(s) below (attach additional page(s) if more space is needed):

Conservation
Benton PUD has an established conservation program that has been in place for the past 30 years. We offer conservation programs for our residential, commercial, industrial and irrigation customers. The programs are funded in part through reimbursement by the Bonneville Power Administration (BPA) and in part by budget dollars appropriated by the Benton PUD Board of Commissioners. Reimbursements from BPA are funded through the power rates we pay BPA.

Our conservation target for 2014 – 2015 is 2.71 average megawatts, with a ten-year potential of 15.51 average megawatts.

Demand Side Management
Benton PUD supports customer generation of power (e.g. solar panels, wind turbines, etc.), up to 100 kilowatts per site, through our Net Metering Program. Benton PUD’s net metering program, as well as the incentives offered to customers’ participating in the program is regulated by state law. As a result of administering the renewable energy system incentive payment program designed by the state of Washington, Benton PUD is able to offset each dollar of incentive payments made by an equal amount of our taxes paid to the state up to a maximum of 0.5% of our taxable power sales.

We currently have 40 customers enrolled in our Net Metering program who have the capacity to generate 201 kilowatts of solar and 6.2 kilowatts of wind.

If yes, how does your utility measure or verify the efficacy of its energy conservation/efficiency/DSM programs? Please describe in detail how your utility measures or verifies the success of its programs below (attach additional page(s) if more space is needed):

Benton PUD measures conservation accomplishments quarterly against established target levels to comply with the Washington State Energy Independence Act. Benton PUD’s energy saving is acquired through multiple sources:

- **Direct savings** are the programs and incentives that are offered to our customers directly such as heat pumps, windows, insulation, etc.
- **Irrigation scheduling** is also a direct savings program where we offer incentives to our irrigation customers. Irrigation scheduling is the process used by irrigation system managers to determine the correct frequency and duration for watering crops.
- **Third party savings** is from services offered through BPA service providers. BPA has developed contracts with service providers that utilities can use their expertise to acquire energy savings. The third party service providers, provides the expertise for utilities to acquire savings from customers such as the industrial sector and the large and small grocery stores.
- **Market transformation** savings come from the Northwest Energy Efficiency Alliance (NEEA). NEEA is a non-profit organization that creates market conditions to accelerate and sustain adoption of energy efficiency products, services and practices within the commercial, industrial and residential sectors. NEEA is supported by and works in collaboration with the Bonneville Power Administration and utilities throughout the Pacific Northwest.

Location of attachment(s):  
- System Improvement B.1a  2014-2015 Conservation Budget Plan  
- System Improvement B.1b  Rules for Interconnection of Electric Generating Facilities (Resolution 2259)  
- System Improvement B.1c  Performance Measures 2013 (CY 2012 & 2013)  
- System Improvement B.1d  Performance Measures 2011 (CY 2010 & 2011)
IV. System Improvement Checklist 25%

2. Does your utility/city provide education outreach to the public, including policymakers, about its energy conservation and/or energy efficiency programs?

☑ Yes
☐ No

If yes, describe in detail how your utility/city provides education outreach below (attach additional page(s) if more space is needed):

Benton PUD maintains an active Conservation Programs Communications Plan to communicate about our residential and commercial conservation programs, including soliciting customer feedback on our 10-year conservation resource potential and biennial targets. Below is a sampling of the type of materials that are created as a part of that communications plan to outreach to the public. These materials (i.e. radio spots, website) are updated annually to reflect current program offerings.

- Customer Newsletters
- Radio Spots
- Website
- Brochures
- Other: News Releases

Benton PUD also communicates regularly with policymakers and through our statewide trade association (WPUDA) about the importance of our supporting conservation programs. Included are the latest issue papers that were prepared in advance of the 2014 legislative session to address proposals to amend our state’s renewable energy target/conservation legislation.

Also included are white papers delivered to our state congressional delegation that address our position on renewable and conservation. These papers were distributed during discussion with our legislators during the annual APPA Legislative Rally.

Location of attachment(s): System Improvement B.2a Conservation communication samples: customer newsletters, radio spots, website pages, brochures and news releases. System Improvement B.2b Conservation white papers.
C – System Maintenance and Betterment

1. **System Maintenance:**

   Does your utility have and maintain records of all plant assets requiring maintenance, including a documented maintenance and inspection schedule?

   - **Yes**

     Benton PUD’s electric system is made up of 91 miles of 115kV transmission lines, 1,626 miles of distribution lines (795 overhead; 831 underground), 37 substations, 54 substation transformers, 17,999 line transformers and 48,989 meters. Benton PUD Engineering & Operations work together to track, inspect and maintain the assets of our electric system. Preventive maintenance reports are prepared annually. A *State of the System* report is presented to the Board of Commissioners highlighting maintenance and inspections performed during the previous year.

   - **No**

     If yes, in the chart below please provide the schedule for maintenance/inspection for all plant assets requiring maintenance on your system.

     **NOTE:** Inspections are not limited to the list of examples provided in the chart below.

<table>
<thead>
<tr>
<th>Asset Requiring Maintenance</th>
<th>Schedule for Maintenance/Inspection (e.g., yearly, every 10 years, daily, N/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable testing</td>
<td>N/A</td>
</tr>
<tr>
<td>Capacitor switch testing</td>
<td>Operationally verified twice per year</td>
</tr>
<tr>
<td>Control house</td>
<td>Monthly (during regular inspections)</td>
</tr>
</tbody>
</table>
| Crossarm/Insulator inspection / testing | 5 year cycle  
Crossarm / insulator inspections take place on overhead services, pole wires and fixtures, and fiber optic contact points to check for proper pole attachments, squirrel damage, secure connections, clearance from ground to conductors, and overall condition. |
| Cut-out testing/inspections | N/A                                                                            |
| Instrument transformer verification | 5 year cycle  
Instrument transformer verification checks for tampering and ensures the meter seals are in place. |
| Meter testing               | 5 year cycle  
Meter inspections check for tampering and ensure the meter seals are in place.  
Benton PUD recently completed deployment of our new AMI meters and is currently developing a revised meter testing schedule based on the life cycle of the new meters. |
| Pedestal and transformer inspections (single and three phase) | Every 5 years  
Pedestal and transformer inspections check for seeping, the appropriate stickers are still located on the unit, and overall condition. |
| Pole testing                | 15 year cycle  
Pole inspections check for internal decay and apply treatment for poles 10 years or older to help preserve the wood. Sterilization is also applied on the ground around designated poles to prevent vegetation growth. This takes place on a four year cycle. In 2013 1740 poles were tested. |
<table>
<thead>
<tr>
<th>Inspection / Testing</th>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay inspection / testing</td>
<td>Every 6 years (or if indication of a problem)</td>
<td>Relay inspections include visual and mechanical inspections, electrical tests, relay element tests, functional trip and control verification testing as well as test values. Extensions, up to six months, may be approved by the Director of Operations.</td>
</tr>
<tr>
<td>Relay inspection / testing – CONTINUED</td>
<td>To support public safety and the reliability of Benton PUD's power system we developed Engineering IDP No. 5: Power System Protection - Configuration and Change Management Program. Among other things this program helps to ensure relay settings and fuse sizes are properly engineered and managed over time. Benton PUD also owns elements of a Transmission Protection System which are subject to North American Electric Reliability Corporation (NERC) PRC-005 Transmission and Generation Protection System Maintenance and Testing requirements. We have completed the necessary testing and documentation to meet the applicable requirements.</td>
<td></td>
</tr>
</tbody>
</table>
| Substation battery inspection / testing  | Monthly (general inspection) Every 6 months (impedance testing) | Substation battery testing is performed as follows:  
  - General inspection is performed monthly (float voltage, pilot cell voltage, pilot cell temperature, ambient room temperature).  
  - Impedance testing is completed every six months. Testing may be performed more frequently as needed. |
| Substation switch inspection / testing    | Monthly (visual inspection) Every 6 years (functional testing) | Functional trip and control verification of DC control circuitry is performed along with relay testing. |
| Substation transformer inspection / testing | Monthly (visual inspection) Annually (oil samples) Every 6 years (Doble testing) | Power transformers are tested as follows:  
  - Prior to energization: visual inspection, transformer turns ratio (TTR), winding resistance, oil samples, power factor testing if possible, megger testing if possible, O₂ and explosive gas tests, sudden pressure test, and thorough inspection of oil preservation system.  
  - Oil samples are taken one day, one week, and six months after initial energization.  
  - Visual inspections are performed monthly.  
  - Oil samples are taken yearly (usually mid-summer) and sent to a 3rd party for analysis (types of oil testing are Liquid Screen, Karl Fischer, and Dissolved Gas Analysis).  
  - Doble insulation testing is completed every six years to measure the fundamental AC electrical characteristics of insulation. |
| Tree trimming                            | 3 year cycle              | Tree trimming is performed on a three-year vegetation management cycle. Based upon the vegetation species, trimming may occur more frequently. |

In 2014, Benton PUD received the Tree Line USA award for the 15th consecutive year. To achieve this aware the utility must follow industry standards for quality tree care; provide annual worker training in best tree-care practices; sponsor a tree-planting and public education program; maintain a tree-based energy conservation program and participate in an Arbor Day celebration.
### IV. System Improvement Checklist

<table>
<thead>
<tr>
<th>Other (please list or include attachment:)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regulators &amp; Load Tap Changers inspection / testing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. Monthly (visual inspection)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annually (oil samples)</td>
</tr>
<tr>
<td>Every 6 years (Doble testing)</td>
</tr>
</tbody>
</table>

Regulators & LTCs are tested as follows:
- Prior to energization: external inspection, transformer turns ratio (TTR), oil samples, Doble testing, thorough inspection of oil preservation system, and manual run through all contact positions.
- Oil samples are taken one day, one week, and six months after initial energization.
- Visual inspections as well as manual tap changer operation performed monthly.
- Oil samples are taken yearly (usually mid-summer) and sent to a 3rd party for analysis (types of oil testing are Liquid Screen, Karl Fischer, and Dissolved Gas Analysis).
- De-energized inspection and testing is performed every three years or 50,000 operations (or sooner depending on the results of the first year inspection).

<table>
<thead>
<tr>
<th>2. Monthly (visual inspection)</th>
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<tbody>
<tr>
<td>Every 4 years</td>
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</table>

Breakers/reclosers/metal-clad switchgears are tested as follows:
- Pre-energization operational testing is performed.
- Visual inspections as well as counter reads are performed monthly.
- An annual inspection shall alternate between metal-clad (even years) and freestanding (odd years); resulting in a two-year cycle for every piece.
- Maintenance performed every four years: Functional trip and control verification of DC control circuitry is performed along with relay testing.

*Note: If a recloser experiences an unusually high number of operations or heavy fault duty, maintenance should be performed as soon as possible.*

<table>
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<tr>
<th>3. Every 6 years</th>
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| 3. Gang Operated Air Break & Disconnect Switches testing |

<table>
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<tr>
<th>4. Monthly (visual inspection)</th>
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<tbody>
<tr>
<td>Every 6 years</td>
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Circuit Switchers are to be tested as follows:
- Visual inspection of vacuum interrupters for indication of a SF6 low pressure target is performed monthly.
- Maintenance performed every six years: Functional trip and control verification of DC control circuitry is performed along with relay testing.

<table>
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<tr>
<th>5. 6 month cycle</th>
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Infrared inspections test the connections of our underground feeders in vaults and pad mounted switch and fuse cabinets. The inspection is conducted during times of peak load.

| 5. Infrared Program for Underground System |

<table>
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<tr>
<th>6. Two times per year</th>
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Overhead Line Patrol: Visual inspections of our wires, insulators and attachments are completed.
IV. System Improvement Checklist 25%

If yes, please provide a representative sample of maintenance or inspection records for assets identified above.


2. System Losses:

Does your utility have any processes/programs in place that address overall system loss?

☐ Yes  ☐ No

Benton PUD measures the amount of energy losses on our system quarterly. The industry standard benchmark we use is the median for 41 utilities with 20,000 to 50,000 customers in the 2011 APPA survey “Selected Financial and Operating Ratios of Public Power Systems” published in November 2012. See results of our performance measures for 2014, 2012 & 2011.

Note: In 2013, Benton PUD began a process to redefine our performance measure in order to better assess the energy losses on our system. Benton PUD changed the rating criteria to recognize the sensitivity of the loss numbers to billing cycle differences between our monthly wholesale supply bill which lines up with the first and last days of each month and our customer billing which occurs throughout different days of the month. Our goal beginning in 2014 is to be no more than a percentage point above the APPA benchmark.

If yes, what are your utility’s current system losses? 3.5 %

NOTE: Typical range is between 3-8%

If yes, check the applicable method(s) used to lower or maintain low system losses.

Check all that apply:

☐ Operations improvement (balancing loads and phases)
☐ Adding parallel feeders to reduce loading
☐ VAR (Reactive Power) management (capacitors, equipment upgrades)
☐ Distribution transformer management (e.g., analysis/upgrade, transformer load management to reduce losses, multiple transformers versus single transformer based on system analysis, voltage management, etc.)
☐ Theft prevention

Benton PUD deployed Advanced Metering Infrastructure (AMI) meters that are equipped with a tamper detection alarm that notifies us if a meter is removed.

☐ Calculate and consider losses in improvement decisions
☐ Voltage upgrade
☐ Conductor upgrade
☐ Other
IV. System Improvement Checklist 25%

If other, describe in detail (attach separate sheet(s), if needed):

IV. System Improvement Checklist  25%

3. **Near-Term Capital and O&M Projects:**

   Please provide a detailed description of projects that your utility has recently completed or will be working on in the near term (with a focus on the past two years and the next two years) as a way to continually improve its system.

   Please include a copy of your capital and O&M budget, along with detailed descriptions and a funding breakdown of those projects.

   Submission of your utility’s capital improvement plan\(^1\) will suffice for this question, as long as it includes detailed descriptions of projects with a funding breakdown and any other information that will provide a clear picture of your utility’s near-term capital and O&M projects. To sustain system excellence, a utility should regularly reinvest in maintaining and improving its system.

   If your utility does not have a formal capital improvement plan, your write-up should be similar to what would be submitted to your utility and/or city board or council for approval and to inform them of projects to be completed in the current budget year. The write-up should include associated costs and projected budgets for all projects conducted in the past two years or planned for the next two years.

   A spreadsheet with project lists and estimated costs should be accompanied by detailed project descriptions. Suggested items that may be addressed in this section include:

   - Distribution line extensions, replacements, or upgrades
   - Substation projects (new installation or upgrades)
   - Transmission replacements or extensions
   - Upgrades to utility software/hardware
   - Equipment upgrades (trucks/buildings/etc.)
   - Reconductoring projects
   - General maintenance

   You may use the area below to provide a list with descriptions and supporting information; however, separate attachments are highly encouraged.

   Benton PUD’s Capital Requirements Plan includes a description of each capital project and the funding level for the prior year (including any amendments) as well as the current and three subsequent years. Benton PUD’s Engineering & Operations budgets include maintenance expenses not included in our capital funding.

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\(^{1}\) Please refer to the RP\(_3\) Application Guide for more information, and for a detailed explanation of what should be addressed.
4. **Planning Study:**

Has your utility performed an internal or external analysis or planning study to help evaluate the **long-term** needs of your utility’s system infrastructure?

- [ ] Yes (Please attach the current executive summary or table of contents of your utility’s analysis or planning study)

  *Benton PUD has a set of criteria used to evaluate the long-term needs of our system’s infrastructure. System Performance and Equipment Loading Criteria are included in the 2014 Five Year Plan of Service. Capital projects needed to ensure satisfactory electricity service are identified and prioritized in the Transmission System study.*

- [ ] No (Please provide a statement as to why your utility doesn’t perform a load forecast)

  If yes, check all items below that are addressed in the analysis or planning study:
  - [ ] Load forecast
  - [ ] Contingency analysis (e.g., alternate feed)
  - [ ] Fuse coordination/fault analysis
  - [ ] Project identification
  - [ ] Equipment age analysis
  - [ ] Land and environmental analysis (e.g., SPCC, ROW)
  - [ ] Capacity studies
  - [ ] Other (please describe or include attachment: _____)

  If yes, please indicate the time frame for your utility’s analysis or planning study:
  - [ ] Conducted Annually/Ongoing Process
  - [ ] Three Year System Plan
  - [ ] Five Year System Plan
  - [ ] Ten Year System Plan
  - [ ] Other: _____ Year System Plan

*Location of attachment(s): System Improvement C.4a 2014 Five Year Plan of Service. System Improvement C.4b Transmission System Study.*

Submitted By: Blake Scherer

Signature: ____________________________________________

Title: Supervisor of System Automation & Grid Services

Utility Name: Benton PUD