



CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION (CMUA) PHYSICAL SECURITY PLAN

REPORT ON BWP'S PHYSICAL SECURITY PROGRAM
FOR DISTRIBUTION-LEVEL FACILITIES

June 22, 2021

Contents of this document have been redacted for review in public forum

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I. OVERVIEW

A. GOAL OF CMUA PHYSICAL SECURITY PLAN

BWP recognizes the importance of securing the safety and reliability of its electric system and therefore participated in the California Public Utilities Commission's (CPUC) Physical Security proceeding and has undertaken this assessment. In the spirit of continued cooperation, BWP offers the following in response to CPUC Decision 19-01-018, "marking California as the first state in the nation to adopt rules to safeguard its electric distribution grid against terrorist attack".

Ensuring the safety of its facilities is a top priority for BWP, and BWP prioritizes safety in all aspects of its design, operation, and maintenance practices. The overarching goal of this CMUA Physical Security Plan is to describe BWP's risk management approach toward distribution system physical security, with appropriate consideration of resiliency, impact, and cost.

B. DESCRIPTION OF BURBANK WATER AND POWER (BWP)

Burbank Water and Power (BWP) is a community-owned utility in Burbank, California. BWP serves approximately 53,000 customers within a geographic area of nearly 17.5 miles. BWP operates twenty (20) distribution facilities and maintains approximately 335 miles of distribution infrastructure to serve the city.

C. RESULTS OF CMUA PHYSICAL SECURITY PLAN ASSESSMENT

BWP staff assessed twenty (20) distribution facilities according to CPUC guidelines and determined four (4) substations to be Covered Distribution Facilities as defined in Section IV, Paragraph A. After evaluation, all four of these facilities were found to require a mitigation plan.

REDACTED performed an independent review of BWP's CMUA Physical Security Plan and an on-premises evaluation of several BWP distribution facilities. Utilizing their substantial industry experience, REDACTED staff were able to identify many physical security risks to BWP's Covered Distribution Facilities. These risks included insufficient perimeter walls, lack of motion detection, poor access control, and others. Recommendations to mitigate these issues were then delivered to BWP in the form of a site assessment summary.

BWP has evaluated the findings in the site assessment summary and found the recommendations to be accurate and helpful. The findings from the site assessment have been incorporated into this plan and BWP will use the recommendations where feasible to improve the security at each Covered Distribution Facility.

II. BACKGROUND

On April 16, 2013, one or more individuals attacked equipment located within Pacific Gas and Electric Company's (PG&E) Metcalf Transmission Substation, ultimately damaging seventeen (17) transformers. These individuals also cut nearby fiber-optic telecommunication cables owned by AT&T. In response to the attack, the Federal Energy Regulatory Commission (FERC) directed the North American Electric Reliability Corporation (NERC) to develop new physical security requirements, resulting in the creation of CIP-014.

At the state level, Senator Jerry Hill authored SB 699 (2014), directing the CPUC to "consider adopting rules to address the physical security risks to the distribution systems of electrical corporations." In response to SB 699, the CPUC's Safety and Enforcement Division, Risk Assessment and Safety Advisory Section (RASA) prepared a white paper proposing a new requirement for investor owned utilities (IOUs) and publicly owned utilities (POUs) to develop security plans that would identify security risks to their distribution and transmission systems, and propose methods to mitigate those risks. The CPUC hosted a series of workshops to better understand the state of utility physical security protections and to seek input on refining their proposal.

In order to support statewide improvement in how utilities address distribution level physical security risks, the California Municipal Utilities Association (CMUA), which is the statewide trade association for POUs, coordinated with the state's IOUs to develop a comprehensive Straw Proposal¹ (Joint IOU/POU Straw Proposal) for a process to identify at-risk facilities and, if necessary, develop physical security mitigation plans. As a member of CMUA, BWP staff participated in the development of the Joint IOU/POU Straw Proposal through a CMUA working group as well as through direct meetings with the IOUs. The Joint IOU/POU Straw Proposal set out a process for the following: (1) identifying if the utility has any high priority distribution facilities; (2) evaluating the potential risks to those high priority distribution facilities; (3) developing a mitigation plan for the distribution facilities where the identified risks are not effectively mitigated through existing resilience/security measures; (4) obtaining third party reviews of the mitigation plans; (5) adopting a document retention policy; (6) ensuring a review process established by the POU governing board; and (7) implementing information sharing protocols.

RASA filed a response² to the Joint IOU/POU Straw Proposal that recommended various modifications and clarifications, including a six-step process. Additionally, RASA recommended that utility mitigation plans include: (1) an assessment of supply chain vulnerabilities; (2) training programs for law enforcement and utility staff to improve communication during physical security events; and (3) an assessment of any nearby communication utility infrastructure that supports priority distribution substations.

¹ Straw Proposal available at:

https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/Safety/Risk_Assessment/physicalsecurity/R1506009-Updated%20Joint%20Straw%20Proposal%20and%20Cover%20083117%20Filing.pdf.

² RASA Response available at:

https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/Safety/Risk_Assessment/physicalsecurity/Final%20Staff%20Recommendation%20for%20Commission%20Consideration%20010318.pdf.

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In early 2019, the CPUC approved Decision (D.) 19-01-018, which adopted the Joint IOU/POU Straw Proposal as modified by the RASA proposal, with additional clarifications and guidance. D.19-01-018 clarified that where there is a conflict between the Straw Proposal and the RASA proposal, then it is the rule in the RASA proposal that controls.³

D.19-01-018 asserted that POUs should utilize the CMUA Security Plan process described therein. BWP is following the process and issuing this report at this time to reflect its existing commitment to safety and to protecting its ratepayers' investment by taking reasonable and cost-effective measures in an effort to safeguard key assets of its distribution system.

³ D.19-01-018 at 43, footnote 58 ("Should there be any question of which shall predominate should there be any incongruity or conflict between a utility or SED RASA recommended rule, the SED RASA rule shall apply.").

III. PLAN DEVELOPMENT PROCESS

A. PHYSICAL SECURITY PRINCIPLES

The Joint IOU/POU Straw Proposal seeks to support the creation of a risk management approach toward distribution system physical security, with appropriate considerations of resiliency, impact, and cost. In order to accomplish this risk-based approach, the Joint IOU/POU Straw Proposal identifies several principles to guide the development of each individual utility's program. These principles are the following:

1. Distribution systems are not subject to the same physical security risks and associated consequences, including threats of physical attack by terrorists, as the transmission system.
2. Distribution utilities will not be able to eliminate the risk of a physical attack occurring, but certain actions can be taken to reduce the risk or consequences, or both, of a significant attack.
3. A one-size-fits-all standard or rule will not work. Distribution utilities should have the flexibility to address physical security risks in a manner that works best for their systems and unique situations, consistent with a risk management approach.
4. Protecting the distribution system should consider both physical security protection and operational resiliency or redundancy.
5. The focus should not be on all distribution facilities, but only those that risk dictates would require additional measures.
6. Planning and coordination with the appropriate federal and state regulatory and law enforcement authorities will help prepare for attacks on the electrical distribution system and thereby help reduce or mitigate the potential consequences of such attacks.

B. CMUA Physical Security Plan Development Process

BWP utilized a multi-step process to develop this CMUA Physical Security Plan that is consistent with the Joint IOU/POU Straw Proposal and D.19-01-018. The relevant six (6) steps of that process are as follows:

STEP 1: ASSESSMENT/PLAN DEVELOPMENT

BWP staff and/or consultants prepare a Draft Physical CMUA Security Plan through the process set forth in Steps 1A, 1B, and 1C.

STEP 1A: IDENTIFY COVERED DISTRIBUTION FACILITIES

BWP will evaluate all distribution-level facilities in its service territory that are subject to its control to determine if any facility meets D.19-01-018's definition of a Covered Distribution Facility using the seven (7) factors identified in the Joint IOU/POU Straw Proposal.

STEP 1B: PERFORM RISK ASSESSMENT

For every individual Covered Distribution Facility identified pursuant to Step 1A, BWP will perform an evaluation of the potential risks associated with a successful physical attack on that Covered Distribution Facility, and whether existing grid resiliency, back-up generation, and/or physical security measures appropriately mitigate identified risks.

STEP 1C: DEVELOP MITIGATION PLAN

If there are any individual Covered Distribution Facilities where the Risk Assessment performed pursuant to Step 1B finds that the existing mitigation and/or resiliency measures do not effectively mitigate the identified risks, then BWP will develop a Mitigation Plan for that Covered Distribution Facility. The Mitigation Plan will use a risk-based approach to select reasonable and cost-effective measures that can either be security focused (e.g., walls or alarms) or resiliency focused (e.g., adequate spare parts).

STEP 2: INDEPENDENT REVIEW

For every CMUA Physical Security Plan cycle, BWP will document the results of the identification process, risk assessment, and mitigation plan development performed pursuant to Steps 1A, 1B, and 1C. This documentation in combination with narrative description in Section IX below, constitutes BWP's Draft CMUA Physical Security Plan. Each CMUA Utility Physical Security Plan is submitted to a Qualified Third Party for independent review. The Qualified Third Party Reviewer will then issue an evaluation that identifies any potential deficiencies in the Draft CMUA Physical Security Plan as well as recommendations for improvements. BWP will then modify its plan to address any identified deficiencies or recommendations, or will document the reasons why any recommendations were not adopted. The combination of the Draft CMUA Physical Security Plan, the non-confidential conclusions of the Qualified Third Party Reviewer, and BWP's responses to the Qualified Third Party Review will constitute BWP's CMUA Physical Security Plan.

STEP 3: VALIDATION

BWP will submit its CMUA Physical Security Plan to a qualified authority for review. Such entity will provide additional feedback and evaluation of BWP's CMUA Physical Security Plan and, to the extent that this entity is authorized, such entity deems the CMUA Physical Security Plan as adequate.

STEP 4: ADOPTION

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BWP's CMUA Physical Security Plan will be presented to and adopted by the Burbank City Council at a public meeting.

STEP 5: MAINTENANCE

BWP will refine and update the CMUA Physical Security Plan as appropriate and as necessary to preserve plan integrity.

STEP 6: REPEAT PROCESS

BWP will repeat this six-step process at least once every five (5) years.

IV. IDENTIFICATION OF COVERED DISTRIBUTION FACILITIES (STEP 1A)

As described in Section III, Step 1A of the CMUA Physical Security Plan process involves assessing all distribution-level facilities that are subject to the control of BWP to determine which facilities are Covered Distribution Facilities subject to the need for a risk assessment. This Section describes the factors that BWP used to evaluate its distribution facilities and the results of its evaluation.

A. IDENTIFICATION FACTORS

The Joint IOU/POU Straw Proposal defines seven (7) screening factors to determine if a facility is a Covered Distribution Facility. Some factors require additional definitions and/or clarifications in order to be applied to BWP's facilities. The following Table provides the Joint IOU/POU Straw Proposal's Factors as modified/clarified by BWP.

Contents of the chart have been redacted for review in public forum

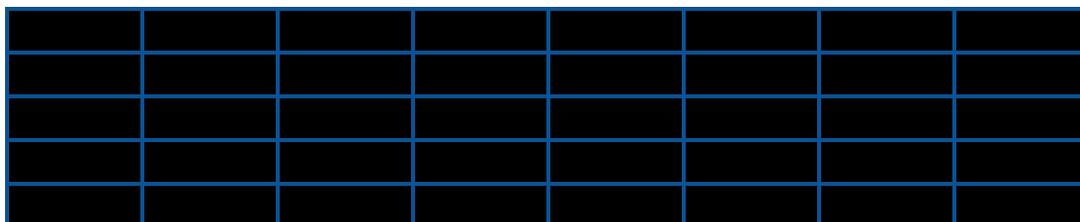
	Joint IOU/POU Straw Proposal Description	Additional Clarification
1		
2		
3		
4		
5		
6		
7		

B. IDENTIFICATION ANALYSIS

In performing this identification analysis, BWP is assessing all distribution level facilities that are subject to its exclusive control, or if the facility is jointly owned, the joint ownership agreement identifies BWP as the entity responsible for operation and maintenance. The specific types of facilities are substations.

Based on this scope, BWP has identified twenty (20) facilities that are subject to this identification analysis. Of these 20 facilities, four (4) fall within one of the categories listed above. These 4 facilities listed below constitute BWP's Covered Distribution Facilities.

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V. RISK ASSESSMENT (STEP 1B)

A. METHODOLOGY

Pursuant to the process identified in the Joint IOU/POU Straw Proposal and D.19-01-018, BWP will assess the potential risks associated with a successful physical attack on each of the Covered Distribution Facilities identified in Section IV above. For purpose of this analysis, a physical attack is limited to the following: (1) theft; (2) vandalism; and (3) discharge of a firearm. A “successful physical attack” is limited to circumstances where a theft, vandalism, and/or the discharge of a firearm has directly led to the failure of any elements of the Covered Distribution Facility that are necessary to provide uninterrupted service to the specific load identified in Section IV.

In order to perform this risk analysis, BWP evaluates the relative risk that (1) a physical attack on a Covered Distribution Facility will be successful considering the protective measures in place; or (2) that the impacts of a successful attack will be mitigated due to resiliency and other measures in place.

B. MITIGATION MEASURES

D.19-01-018 identifies the specific mitigation measures that a utility should consider when performing this risk analysis. The following table lists these mitigation measures and provides BWP’s additional clarifications that are necessary to apply these measures to the BWP’s territory.

Contents of the chart have been redacted for review in public forum

Measure	D.19-01-018 Description	Additional Clarification
1		
2		
3		
4		
5		
6		
7		
8		
9		

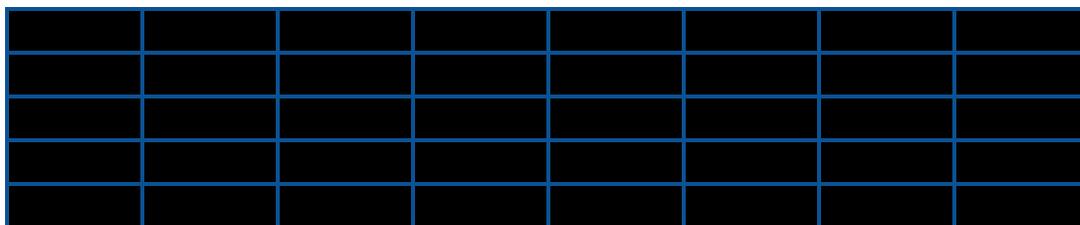
C. RISK ASSESSMENT

Based on the process described in the Joint IOU/POU Straw Proposal and the direction provided in D.19-01-018, BWP has determined that of the four (4) Covered Distribution Facilities identified in Section IV, the existing programs and measures effectively mitigate the risks of a physical attack for none of those Covered Distribution Facilities.

BWP's approach to security is to maintain a strong physical perimeter to each substation and to ensure that each substation has ample resiliency. Due to the age of many of BWP's substations, some of the measures taken to secure the substations are antiquated and in need of upgrade or replacement with more modern and secure methods. The risk assessment for each substation is presented below.

The following table provides a summary of BWP's assessment of each mitigation measure for each Covered Distribution Facility. The "X" denotes a mitigation measure that has been satisfied.

Contents of the chart have been redacted for review in public forum



As identified above, four (4) of the Covered Distribution Facilities do not have existing mitigating measures sufficient to effectively mitigate the identified risks of a physical attack. These facilities are discussed in Section V.

1. REDACTED SUBSTATION
2. REDACTED SUBSTATION
3. REDACTED SUBSTATION
4. REDACTED SUBSTATION

VI. COVERED DISTRIBUTION FACILITY MITIGATION PLANS (STEP 1C)

Pursuant to the process identified in the Joint IOU/POU Straw Proposal and D.19-01-018, BWP has determined that for four (4) of the Covered Distribution Facilities that are subject to BWP's control, the existing mitigation measures do not effectively reduce the risk of a physical security attack. This section describes the Mitigation Plan that BWP has developed for each of these Covered Distribution Facilities.

A. REDACTED MITIGATION PLAN

BWP anticipates the security enhancements to be completed within two years, and expects such work to cost approximately \$45,000. The final cost may change depending on increased costs of materials, labor, equipment, etc.

B. REDACTED MITIGATION PLAN

BWP anticipates the security enhancements to be completed within two years, and expects such work to cost approximately \$15,000. The final cost may change depending on increased costs of materials, labor, equipment, etc.

C. REDACTED MITIGATION PLAN

BWP anticipates the security enhancements to be completed within two years, and expects such work to cost approximately \$40,000. The final cost may change depending on increased costs of materials, labor, equipment, etc.

D. REDACTED MITIGATION PLAN

BWP anticipates the security enhancements to be completed within two years, and expects such work to cost approximately \$50,000. The final cost may change depending on increased costs of materials, labor, equipment, etc.

VII. INDEPENDENT EVALUATION AND RESPONSE (STEP 2)

A. REQUIREMENTS FOR QUALIFIED THIRD PARTY REVIEW

D.19-01-018 specifies the following criteria for a Qualified Third Party Reviewer:

Independence: A Qualified Third Party Reviewer cannot be a division of the POU. A governmental entity can select as the third-party reviewer another governmental entity within the same political subdivision, so long as the entity has the appropriate expertise, and is not a division of the POU that operates as a functional unit, i.e., a municipality could use its police department as its third-party reviewer if it has the appropriate expertise.

Adequate Qualifications: A Qualified Third Party Reviewer must be an entity or organization with electric industry physical security experience and whose review staff has appropriate physical security expertise, which means that it meets at least one of the following: (1) an entity or organization with at least one member who holds either an ASIS International Certified Protection Professional (CPP) or Physical Security Professional (PSP) certification; (2) an entity or organization with demonstrated law enforcement, government, or military physical security expertise; or (3) an entity or organization approved to do physical security assessments by the CPUC, Electric Reliability Organization, or similar electrical industry regulatory body.

B. IDENTIFICATION OF THIRD PARTY REVIEWER

BWP has selected REDACTED as its Third Party Reviewer.

REDACTED is a \$1.4 billion global, industry-leading systems integrator that designs, installs, and services electronic security, cybersecurity, fire alarm, and life safety systems. REDACTED meets the following criteria:

1. REDACTED is an entity or organization with electric industry physical security experience and whose review staff has appropriate physical security expertise.
2. REDACTED is an entity or organization with at least one member who holds either an ASIS International Certified Protection Professional (CPP) or Physical Security Professional (PSP) certification.
3. REDACTED is an entity or organization with demonstrated law enforcement, government, or military physical security expertise.

C. PUBLIC RESULTS OF THIRD PARTY EVALUATION

As part of their site assessment engagement with Burbank Water & Power (BWP), REDACTED has reviewed BWP's security plan and performed a site visit and high-level security overview of several BWP facilities. The REDACTED team has prepared a list of recommendations to enhance security at these locations.

D. BWP RESPONSE

BWP acknowledges REDACTED experience and expertise in the area of physical security. REDACTED has provided many recommendations for security enhancement which align with or supplement the physical security measures proposed by BWP staff. BWP accepts the findings presented by REDACTED and agrees to consider each recommended item on a case-by-case basis and where feasible BWP may implement such recommendations.

VIII. VALIDATION (STEP 3)

A. SELECTION OF QUALIFIED AUTHORITY

BWP has selected the Burbank Police Department (BPD) to perform validation of the CMUA Physical Security Plan. BWP considered several other industry organizations and entities. However, BPD has a vast amount of physical security expertise and a close working relationship with Burbank Water and Power, which made BPD the ideal qualified authority.

B. RESULTS OF QUALIFIED AUTHORITY REVIEW

BPD staff has conducted its review of the Burbank Water and Power CMUA Physical Security Plan, including recommendations for security risk mitigation from both BWP as well as REDACTED. The plan and mitigation recommendations present an honest and critical assessment of site vulnerabilities subject to exploitation by attackers as well as viable countermeasures to address such vulnerabilities. BPD staff has determined this plan to be adequate. In addition to those recommendations contained in the report, BPD suggests the following additional considerations:

- REDACTED

The implementation of the measures recommended in the plan and the above-listed recommendations from BPD will make BWP facilities less vulnerable to attack, while preparing police personnel to better respond in the event that one does occur. In addition, these BPD recommendations will provide investigators with the necessary information to assist in identifying those responsible for such an event.

C. BWP RESPONSE TO QUALIFIED AUTHORITY REVIEW

BWP appreciates the time and effort spent by the BPD to validate this report and to provide suggestions to help BWP further improve the security of our distribution facilities. BWP agrees to consider each recommended item on a case-by-case basis and where feasible BWP may implement such recommendations.

IX. NARRATIVE DESCRIPTIONS FOR CMUA PHYSICAL SECURITY PLAN

A. ASSET MANAGEMENT PROGRAM

BWP has taken steps to implement an asset management program to promote optimization and quality assurance for tracking and locating spare parts stock, ensuring availability, and the rapid dispatch of available spare parts.

B. WORKFORCE TRAINING AND RETENTION PROGRAM

BWP is taking steps to implement a workforce training and retention program to employ a full roster of highly-qualified service technicians able to respond to make repairs in short order throughout a utility's service territory using spare parts stockpiles and inventory.

C. PREVENTATIVE MAINTENANCE PLAN

BWP is taking steps to implement a preventative maintenance plan for security equipment to ensure that mitigation measures are functional and performing adequately.