PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

AGENDA ID: 18148
RESOLUTION E-5057
March 12, 2020

R E S O L U T I O N

Resolution E-5057. Approval of Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company to open source cybersecurity applications.

PROPOSED OUTCOME:

- This Resolution approves the request by Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Pacific Gas and Electric Company (PG&E) to publicly release license rights to three cybersecurity software applications, developed under the California Energy Systems for the 21st Century (CES-21) Program, to open source pursuant to Public Utilities (PU) Code section 851 and General Order (GO) 173.

SAFETY CONSIDERATIONS:

- Authorizing the public release of the three cybersecurity-related applications to the open source community will likely have a beneficial impact on safety and utility cybersecurity.

ESTIMATED COST:

- There is no cost impact.

By Advice Letters 4078-E (Southern California Edison Company), 3433-E (San Diego Gas & Electric Company), and 5646-E (Pacific Gas and Electric Company), filed on September 26, 2019.

SUMMARY

This Resolution approves the request by Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Pacific Gas and Electric

Company (PG&E) to publicly release license rights to three cybersecurity software applications, developed under the California Energy Systems for the 21st Century (CES-21) Program, to the open source community pursuant to Public Utilities (PU) Code section 851 and General Order (GO) 173. The release of these license rights will allow third parties to test and further develop the cybersecurity applications and, therefore, is in the public interest and will benefit ratepayers.

BACKGROUND

The CES-21 Program

Established via Decision (D.) 12-12-031 and subsequently modified in D.14-03-029, the CES-21 Program is a public-private collaborative research and development (R&D) effort between SDG&E, SCE, and PG&E (collectively the Joint Utilities) and Lawrence Livermore National Laboratory (LLNL). The objective of the program was to address the challenges of cybersecurity and grid integration for the 21st century energy system in California. The CES-21 Program utilized a team of technical experts from the Joint Utilities and LLNL who leveraged and extended ongoing research in grid cybersecurity. The $35 million program began in 2014 and concluded in Fall of 2019.

In implementing the program, the Joint Utilities acquired intellectual property, including three new cybersecurity R&D applications that were developed under the program.

Resolution E-4943

On January 17, 2018, the Joint Utilities filed Advice Letter 3175-E / 3726-E / 5215-E requesting the release of four cybersecurity R&D applications to the open source community pursuant to PU Code § 851 and GO 173. It was the first request to make applications developed under the CES-21 community available to the open source community. Approved by the Commission on September 28, 2018, Resolution E-4943 approved the Joint Utilities' request to release four cybersecurity-related applications to the open source community. This resolution found that:

1. Public Utilities Code Section 851 and General Order 173 authorize entities regulated by the Commission to submit an advice letter that requests approval for certain transactions that are valued at $5 million or less.

2. The four applications that were approved for release to open source were designed to help reduce the utilities' vulnerability to cyberattacks, and publicly releasing the four cybersecurity applications to open source is beneficial to ratepayers because it will allow the industry to further refine and develop these applications.

Joint Advice Letter 4078-E/3433-E/5646-E

On September 26, 2019 and pursuant to PU Code § 851 and GO 173, the Joint Utilities filed Advice Letter 4078-E/3433-E/5646-E (Joint AL) requesting the release of three cybersecurity R&D applications to the open source community. Specifically, the Joint Utilities and LLNL would like to offer the following applications to the cybersecurity industry:

1. **Exploits, Malware and Vulnerabilities (EMV) Scoring Application**, which fills the gaps of other vulnerability scoring methods by including exploits, malware, applicability, consequence, and guidance that feeds into actionable indicators and courses of action. Storing the analysis results enables learning and refinement with use, resulting in faster future analyses. Analysis sections can be tailored to the utility's needs and capabilities, with the stored results enabling reevaluation as the adversary's or defender's capabilities evolve. The EMV Scoring Application provides a repeatable process that adds context, identifies the most critical cyber issues for judicial use of limited cybersecurity resources, and can be tailored with data driven design.
2. **Structured Threat Observable Tool Set (STOTS)**, which provides users modular, customizable, and platform-agnostic tools to monitor selected aspects of their network environment. STOTS enables users to generate and transmit Structured Threat Information eXpression (STIX) observed data objects for notification and/or remediation. The STIX objects are capable of transmitting details regarding devices added to or removed from a network, changes made to a device configuration within the network. The flexibility and standardized format of the STIX objects will allow for enhanced abilities to share data amongst utilities and ultimately provide better protection for critical infrastructure regarding illicit changes in industrial control system configuration and network architecture.
3. **SimView**, which provides a visual method for exploring results from cyber-physical simulations. It aids in analysis of numerical results and provide insights not otherwise possible when examining large amounts of

textual data. SimView provides the ability to simultaneously visualize data from multiple simulations (e.g. communications simulation and transmission power flow simulation).

The Joint Utilities assert that releasing these products as open source will not create any residual risk to the utilities or their ratepayers, and the increased grid reliability, resiliency, and safety that result from the release of these open source products are of significant value to ratepayers.

PU Code § 851 and GO 173

Under PU Code § 851 and GO 173, a regulated entity may submit an advice letter requesting Commission approval for certain transactions that transfer interests in utility property if the transaction is valued at $5 million or less. The Joint Utilities claim that the transaction described in the Joint AL qualifies for advice letter treatment because the property being transferred does not have a fair market value in excess of $5 million.

NOTICE

Notice of Joint AL 4078-E/3433-E/5646-E was made by publication in the Commission's Daily Calendar. SCE, SDG&E, and PG&E state that a copy of the advice letter was mailed and distributed in accordance with Section 4 of General Order 96-B.

PROTESTS

There were no protests to Joint AL 4078-E/3433-E/5646-E.

DISCUSSION

The Commission reviewed the Joint AL to determine if an advice letter is the appropriate procedural mechanism for this request, and whether the request will provide ratepayer benefits.

Advice Letter Process
PU Code 851 and GO 173 permit approval via the advice letter process for requests to transfer interests in utility property if the transaction is valued at $5 million or less. The three cybersecurity applications likely have minimal market

value at this time, pending further development by third parties for commercial use. Consistent with our finding in Resolution E-4943 regarding other CES-21 applications that were open sourced, the advice letter process is the appropriate procedural mechanism for this request.

Ratepayer benefits

When modifying the program, D.14-03-029 found that CES-21 would benefit ratepayers by ensuring the continued safety, reliability, affordability, and environmental sustainability of California's electric grid through cybersecurity research. In the years since the Commission adopted the decision, CES-21 completed cybersecurity research that is valuable to California ratepayers and the utility industry in general. The Joint Utilities believe that making the three cybersecurity applications that are the subject of this resolution more broadly available will have a positive impact in mitigating cybersecurity threats to the electricity grid, including a repeatable Exploits, Malware, and Vulnerabilities (EMV) prioritization process; the capturing and sending of Structured Threat Information Expression (STIX) data objects; and a web-based visualization tool for graphically exploring data from cyber-physical simulations. As noted in the Joint AL, offering these applications as open source products to the industry will allow the industry to further test, refine, and update these three applications after the CES-21 Program ended in 2019. Refinements to these software applications can help reduce the vulnerability of California's electric infrastructure to cyberattacks and directly benefit ratepayers through improved electric service reliability, resiliency, and safety.

The utilities' request in the Joint AL to approve the release of three cybersecurity-related applications to the open source community is consistent with Resolution E-4943 described above and can reasonably be expected to benefit California ratepayers. Therefore, we approve the Joint Utilities to request to release these three software application licenses to open source without modification.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 20-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 20-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments, and will be placed on the Commission's agenda no earlier than 30 days from today.

FINDINGS

1. The California Energy Systems for the 21st Century (CES-21) Program addresses challenges of cybersecurity and grid integration for the California energy system.
2. On September 26, 2019, Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company (collectively known as the Joint Utilities) filed an advice letter requesting approval to publicly release license rights to three cybersecurity software applications developed within the CES-21 Program to the open source community pursuant to Public Utilities Code Section 851 and General Order 173.
3. This request is consistent with Resolution E-4943.
4. Public Utilities Code Section 851 and General Order 173 authorize entities regulated by the Commission to submit an advice letter that requests approval for certain transactions that are valued at $5 million or less.
5. It is appropriate for the Joint Utilities to seek approval to release license rights to the three applications because the applications have not yet been released to the market and currently do not have a fair market value over $5 million.
6. The three applications that will be released to open source are designed to help reduce the utilities' vulnerability to cyberattacks, and publicly releasing the three cybersecurity applications to the open source community is beneficial to ratepayers because it will allow the industry to further refine and develop these applications, which, when deployed, will improve electric service reliability, resiliency, and safety.

THEREFORE IT IS ORDERED THAT:

1. The request of the Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company to publicly release the three cybersecurity applications to open source as requested in Joint Advice Letter 4078-E/3433-E/5646-E is approved.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted at a conference of the Public Utilities Commission of the State of California held on March 12, 2020, the following Commissioners voting favorably thereon:

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ALICE STEBBINS
Executive Director