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FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference

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PREPARED STATEMENT OF MICHAEL BALL
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Thank you, Chairman, Commissioners, and staff for coordinating this technical conference and for inviting me to participate regarding the impact of Cloud Based Services and Virtualization on Bulk Electric System Operations, Planning, and Security. Berkshire Hathaway Energy encompasses three vertically-integrated electric utilities serving nearly 4 million customers in 11 states, and has been studying issues related to cloud-based services to ensure reliable and cost-effective service to customers across our businesses.

Background

Berkshire Hathaway Energy has been utilizing cloud-based solutions as part of its overall technology approach for more than a decade. As the Commission has noted, some uses are more appropriate for the cloud than others, therefore, we have only deployed cloud-based solutions on a limited basis. We carefully weigh the benefits and potential threats of each implementation of this rapidly evolving technology in order to provide cost-effective, safe and reliable service for our customers.

Benefits and risks of using the cloud

Cloud-based solutions can provide a wide range of benefits and enable businesses to achieve objectives that were limited by traditional technology solutions in brick-and-mortar data centers. Their scalability and speed of deployment are very attractive capabilities for all sizes of businesses. Many technology providers are shifting to cloud-based solutions to offer customers more cost-effective services, sometimes as the only option available. Large, mature cloud providers have developed advanced security capabilities that can be a powerful tool in a company's overall security strategy. However, with all of the enabling aspects of cloud-based technologies, it is critical that a business understand it cannot outsource risk. A disciplined approach to management of cloud implementations is essential and must be applied by a skilled technology and security workforce that is fully aware of the unique administrative and security practices that need to be applied. Many major data breaches have occurred due to failure to apply strict administrative and security controls. Security must be embedded in the solution upon implementation and as a part of all aspects of its ongoing use.

Business applications of the cloud

Berkshire Hathaway Energy has been conservative about embracing cloud solutions and only chooses to do so when the cost, capabilities and security controls provide the best option to drive our performance and enhance service to our customers.

- Business Intelligence – The ability to gather specific data from multiple, protected networks to advance performance and reliability analyses and identify opportunities to improve our programs and services to our customers.

- Hosted Solutions – A number of cloud-based, hosted solutions are used to support business objectives. The solutions range from data storage to support for business-specific applications.
- Cloud Applications – In certain situations, cloud applications are broadly utilized, such as use of select products from Microsoft Office 365 Suite.

While Berkshire Hathaway Energy has leveraged cloud solutions to perform analytics on a wide variety of data related to its energy assets, the company has not embraced cloud solutions to support its operational networks.

Issues to consider

Cloud-based solutions are often promoted as a low-cost option that can be implemented quickly without the assistance of traditional information technology departments. It is essential that information technology disciplines be included in the selection, implementation and ongoing management of cloud solutions.

Many cloud-based solution providers also depend on third party cloud services. It is important to verify the third parties apply equivalent security controls to those required by your company.

Information technology organizations need to develop cloud-specific expertise within their teams. Cloud administration, architecture and security skills are essential to fully leverage and protect systems and data.

Many major security breaches have been related to poorly managed cloud implementations. Threat actors and cyber criminals are becoming increasingly skilled at discovering unprotected systems and data. This reinforces the need for specialized cloud skillsets inside information technology organizations.

The Commission asked how NERC CIP Reliability Standards could be modified to assist entities in addressing compliance concerns related to cloud services. NERC CIPS only focus on protection and administration of specific infrastructure assets, and adapting NERC CIPS to include cloud management requirements may be difficult due to the rapidly evolving nature of cyber crime. We suggest a broader approach that includes encouraging industry to collaboratively establish baseline disciplines and practices unique to managing cloud services to promote successful implementation of secure and resilient solutions.

Berkshire Hathaway Energy takes its responsibility to operate and maintain secure, reliable and resilient energy systems very seriously. While we continue to take a conservative approach to applying cloud solutions in our control networks, we believe the solutions are becoming increasingly beneficial enablers that help us perform complex data analytics to optimize management of our assets.