



***Enabling performance  
through advanced  
monitoring and testing***

A collaborative monitoring and  
testing solution for power and utilities

Increased regulatory demands, the proliferation of technology, and dynamic customer and market behavior are driving rapid change in the power and utilities business climate. As utilities act to seize the opportunities before them, they must also make sure they are properly managing the associated risks and obligations in a cost-effective manner.

For example, NERC's approval of Version 5 of the critical infrastructure protection cybersecurity standards (CIP Version 5) and NERC's Reliability Assurance Initiative represent significant progress in helping mitigate cyber and other operational risks to the bulk power system. The standards also intensify the pressure on utilities to strengthen their controls in an environment in which overall risks are increasing, workforces are constrained, and the urgency to control costs is heightened. Certainly, the stakes are high. Non-compliance with the pervasive and expanding regulatory requirements facing utilities can result in reliability issues, reputational damage, lost regulatory margin, and/or significant fines and penalties.

In this environment, more continuous monitoring and testing gives management the day-to-day peace of mind that what is supposed to be happening within the company's operational controls and compliance environment really is: that compliance processes are keeping up with regulations, that data security and privacy controls are protecting company and customer information, that third-party risks are being managed properly, that quality control and health and safety are meeting customer and regulatory obligations, and that operational controls are meeting company standards—every day, on a continuous and ever-evolving basis. Continuous monitoring and testing enables utilities to speed forward with less worry about being blindsided by compliance failures or unanticipated risk events.

Yet utilities face a difficult challenge: How can they increase the effectiveness and agility of monitoring and testing while controlling or reducing costs and keeping valuable resources focused on core business activities? For many leading organizations, Managed Monitoring and Testing is helping to accomplish this goal. Managed Monitoring and Testing is an emerging outsourcing or co-sourcing solution for the risk, compliance, and control activities that commonly sit in a company's "second line of defense," including:

- NERC compliance (both CIP and non-CIP)
- PHMSA compliance
- Capital project contract compliance
- EPA regulatory compliance
- NRC compliance
- Outsourced third-party monitoring
- Data privacy
- Supply chain management
- Internal controls over financial reporting (ICFR)

Managed Monitoring and Testing helps companies evolve their existing controls and compliance testing processes to a higher quality, more efficient state by:

- Creating an agile, technology-enabled solution to address changing regulatory requirements
- Providing opportunities to potentially reduce the cost of compliance
- Integrating and potentially centralizing a company's existing (and often divergent) monitoring and testing activities
- Applying advanced data analysis and testing techniques (e.g., automated testing, visualization),

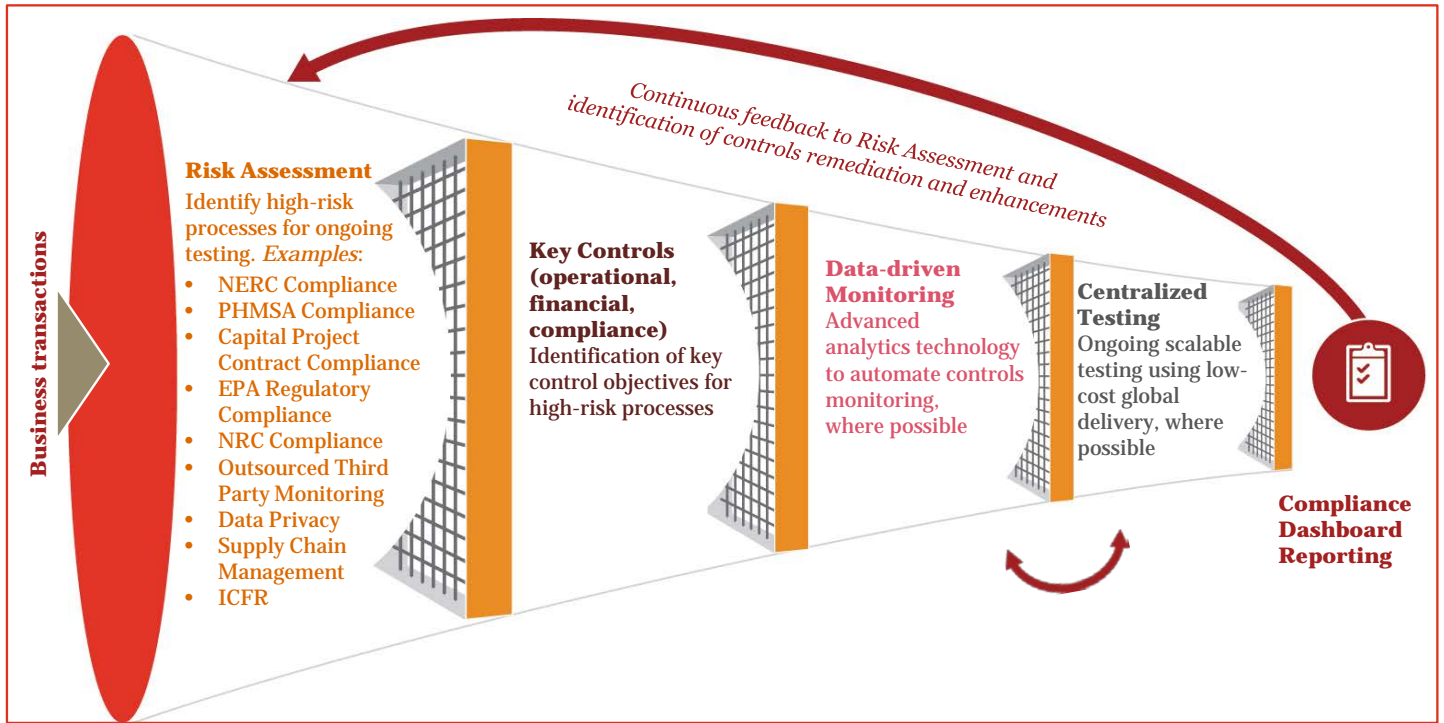
low-cost offsite resources, and continuous process improvement

- Aligning the entire monitoring and testing program to the company's risk assessment and strategic priorities

The end product is a nimble, sustainable monitoring and testing approach supporting the second line of defense that delivers better, and more-timely information to business leaders in a cost effective manner. Figure 1 on the next page depicts how Managed Monitoring and Testing works, leveraging technology, subject matter specialization and low cost on-shore and off-shore resources to optimize utilities' monitoring and testing needs. Importantly, this model is highly scalable and cost efficient. Compliance testing typically occurs in cycles throughout the year. When the needs arise, Managed Monitoring and Testing resources are ramped up and down appropriately.

For companies working on formally documenting controls and test plans to support NERC compliance requirements from the ground up, Managed Monitoring and Testing can start at the design phase, bringing NERC CIP and non-CIP specialists with risk and controls backgrounds who can provide turnkey assessment, design, and implementation support.

**Figure 1: Managed Monitoring and Testing model**



**Process supported by enabling technology**

A managed approach to more continuous controls monitoring advances the company’s compliance culture by strengthening its risk and control framework and better educating field personnel. For example, resources focused on risk and controls and deeply knowledgeable about COSO can provide tailored training to individuals such as electric engineers and gas compliance experts who are being asked to embrace and implement risk and controls concepts for the first time.

A managed approach also brings advanced analytics to increase the effectiveness of testing and identify meaningful changes in controls. For companies with more developed compliance processes and culture, Managed Monitoring and Testing presents an opportunity to spin off specific elements of monitoring and testing such as user access monitoring activities, IT compliance, and/or key

financial controls. By leveraging outside expertise, utilities can reduce costs, increase productivity, and refocus in-house resources away from non-core monitoring and testing activities and back onto mission-critical business drivers. According to PwC’s 18th Annual Global CEO Survey<sup>1</sup>, companies that look to outside sources for innovation ideas are more likely to be top performers in terms of revenue growth, profitability, and innovation. So, utilities must ask themselves: *Is monitoring and testing really in my organization’s “wheelhouse”, or could a specialized and scalable third party provider be leveraged, to deliver more consistent testing at a potentially lower cost?*

**The Analytics Advantage**

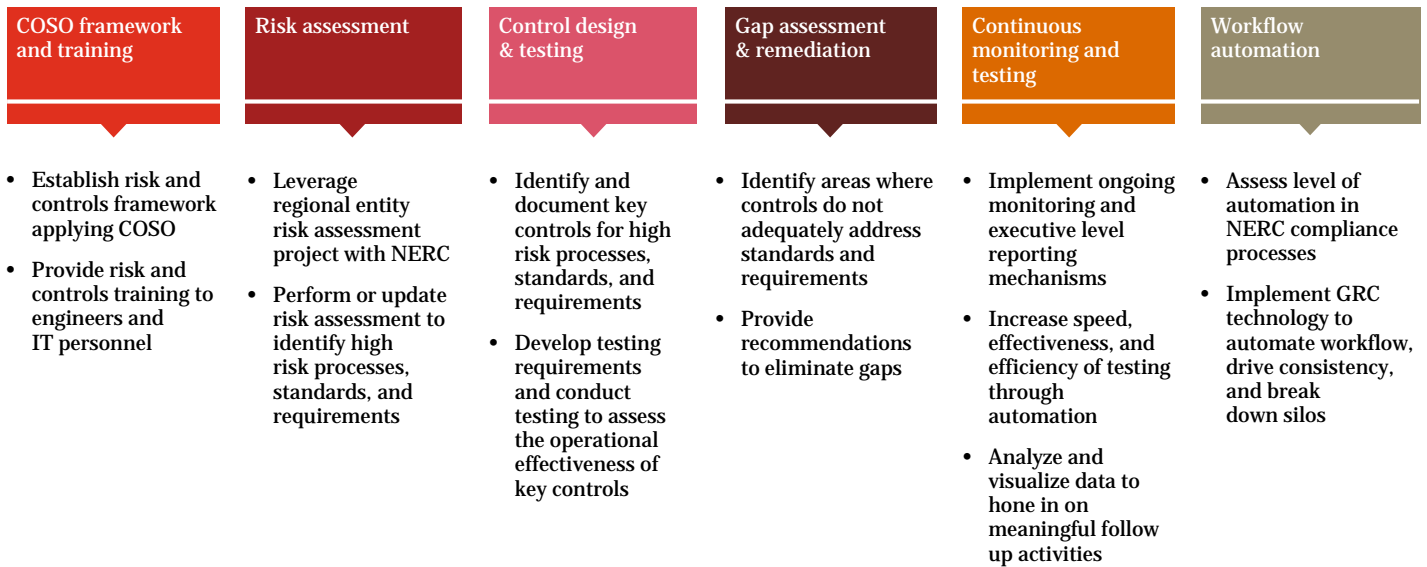
Managed Monitoring and Testing provides utilities with advanced analytics capabilities that help reduce and manage risks. Data analytics can create intelligent sampling, help automate testing, and provide intuitive dashboards for continuous monitoring and real-time insight. The right solution provider brings the ability to help cleanse and normalize data, implement analytical tools into first-line operations, and monitor programs through dashboards and visualization. Consider NERC protection and control standard 005 (PRC-005) targeted at ensuring all transmission and generation protection systems affecting the reliability of bulk electric systems are maintained and tested. With the volume of equipment, data and processes involved, it is difficult to perform testing manually. Analytics solutions can automate important aspects of that process to drive efficiency, reduce cost, and improve monitoring.

<sup>1</sup> PwC 18th Annual Global CEO Survey (2015), [www.pwc.com/gx/en/ceo-survey/2015/index.jhtml](http://www.pwc.com/gx/en/ceo-survey/2015/index.jhtml).

# Moving toward innovation in the second line of defense

A managed service is not limited to monitoring and testing. It also supports laying the groundwork necessary to establish a sound foundation for monitoring and testing to exist (see Figure 2). Power and utility companies are beginning to implement processes and systems that deliver a more coordinated view of internal monitoring and testing across the second line of defense. Partnering with a provider that specializes in controls, compliance, and "risk process outsourcing" can give organizations immediate access to skilled resources and technologies that enables that shift, thereby helping them move quickly to a more nimble, more proactive, and more cost-effective compliance and controls testing function.

**Figure 2: Managed Monitoring and Testing – example areas of focus**



The benefits of a Managed Monitoring and Testing solution can be multiple and long-lasting:

- Effective monitoring and testing prioritized to the business' greatest risks.** A specialized provider has the capabilities to analyze an organization's risks, prioritize monitoring activities, assist with evolving risk and regulatory issues, execute analytics and testing, and back it all up with reporting and technology that make the test results easily available and analyzable.
- Additional talent where it's needed and a restored focus on core processes.** The right provider gives utilities the flexibility to supplement their teams by leveraging a flexible talent pool with deep industry specialization and extensive capabilities in controls, compliance, and data analytics. Fully outsourcing or co-sourcing of monitoring and testing processes also takes pressure off of internal resources for whom monitoring and testing may be a secondary duty, allowing them to refocus onto core business processes.
- Coordinated, standardized, and flexible monitoring and testing—across silos.** At many utilities, monitoring and testing activities are spread across the organization, depriving leadership of a coordinated view and creating potential coverage gaps and duplicative processes. A managed solution creates monitoring and testing standards that are consistent and applicable across the company, and have the flexibility to evolve and mature easily as compliance issues and operating conditions change.

- **Front-line technologies to control risk both today and tomorrow.** A Managed Monitoring and Testing solution provider can help optimize surveillance systems, extend the capabilities and interfaces of existing risk and compliance solutions, and develop and implement key performance indicators, dashboards, and management reporting systems. Data analytics can help evaluate current performance, identify key vulnerabilities, recommend changes to systems and processes, and inform other areas across the monitoring and testing life cycle.

- **Sustainable cost savings.** Through a managed solution, companies can leverage proven, leading methodologies and subject matter specialization, all while potentially reducing their monitoring and testing costs and reducing the chance of costly compliance failures.

The significant benefits produced from an outsourced or co-sourced approach to monitoring and testing can lead to greatly enhanced risk and compliance monitoring, a more coordinated and standardized testing approach, more effective resource utilization, more bandwidth to focus on core business processes, and potentially greater return on investment. Given utilities' desire to cost-effectively manage their increasing regulatory complexity and improve monitoring and testing to better grapple with today's risks, it may be time to embrace an alternative that brings both the increased rigor needed today and the increased flexibility needed in the future.



## ***Gaining a new vantage point for controls and compliance***

Diligent, recurring monitoring and testing is the backbone of an effective controls and compliance program, working every day to help identify and remediate weaknesses in controls and processes, and producing intelligence that can be fed back into the risk and controls assessment process to provide deeper insight into the organization's risk profile and control posture.

But day-to-day monitoring and testing can also strain the bandwidth of organizational resources and dilute their focus on more strategic business processes. Creating a third-party outsourcing or co-sourcing relationship for those services is a potentially cost-effective way of alleviating stress in the monitoring functions while also achieving a higher level of monitoring and testing maturity, with regular evaluation and updating of processes and controls.

Compliance and risk management will always come with some level of investment. The question is, when to spend. Make the right investments on the front end, and enable the company to perform against its business plan with less risk of derailment. Wait and hope things fall into place, and risk exposure to significant fines, legal costs, reputational damage or catastrophic event. Early, targeted investment is the clear, cost-effective choice.

Power & Utility companies should ask themselves:

- What is your level of risk and compliance program maturity?
- Are your monitoring programs effectively aligned to your key risks and executed in a consistent manner to produce the greatest coverage?
- Could a managed solution offer opportunities to optimize your controls monitoring and/or reduce cost of compliance?
- Are there current human resource challenges to achieving effective controls monitoring with internal resources?
- How well do you use your data and technology to effectively drive testing and monitoring activity and measure results across the organization?

## ***Contact information***

***For a deeper conversation about how Managed Monitoring and Testing can enable the performance of your organization, contact:***

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