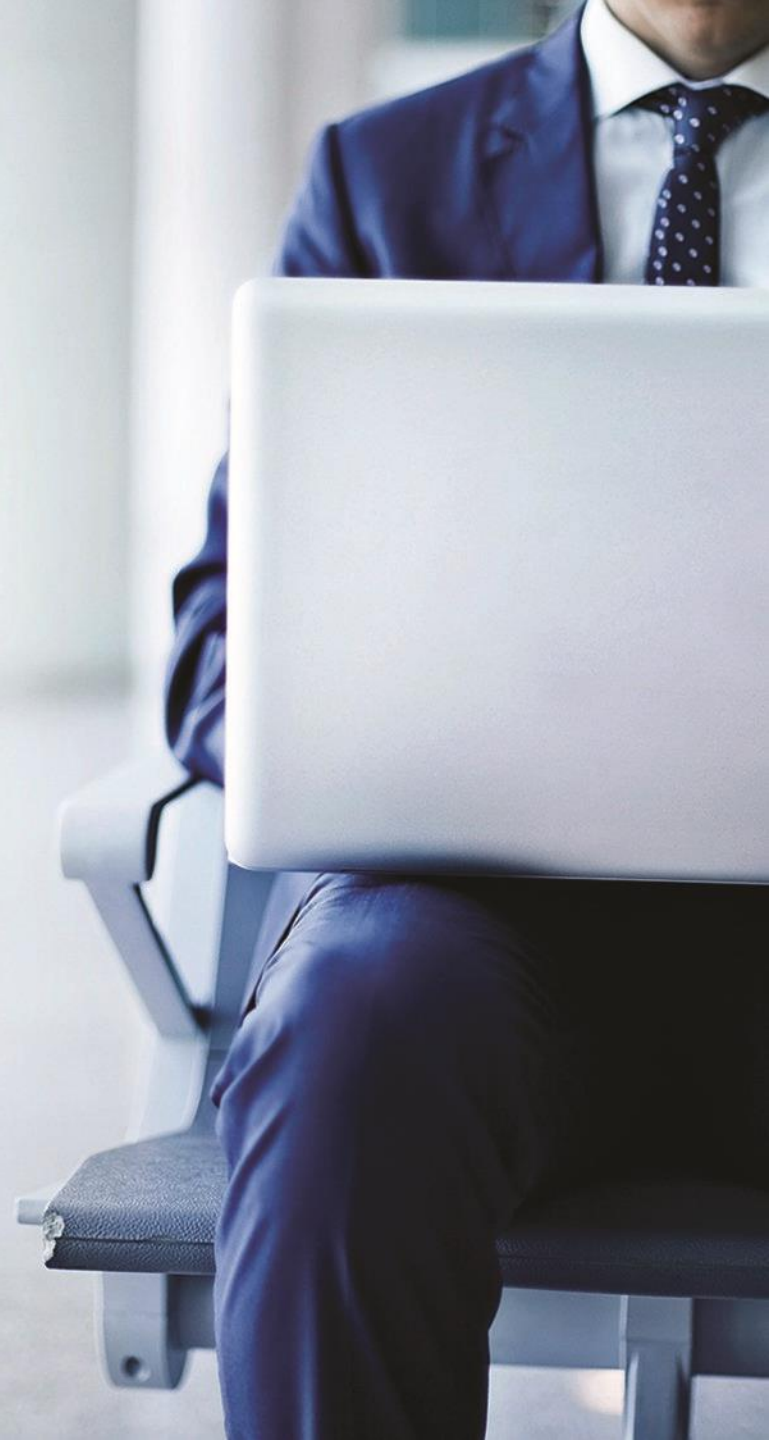




Billing and Credit Working Group (BACWG)

New York Independent System Operator
2017 Service Organization Controls Report Update

August 21, 2017

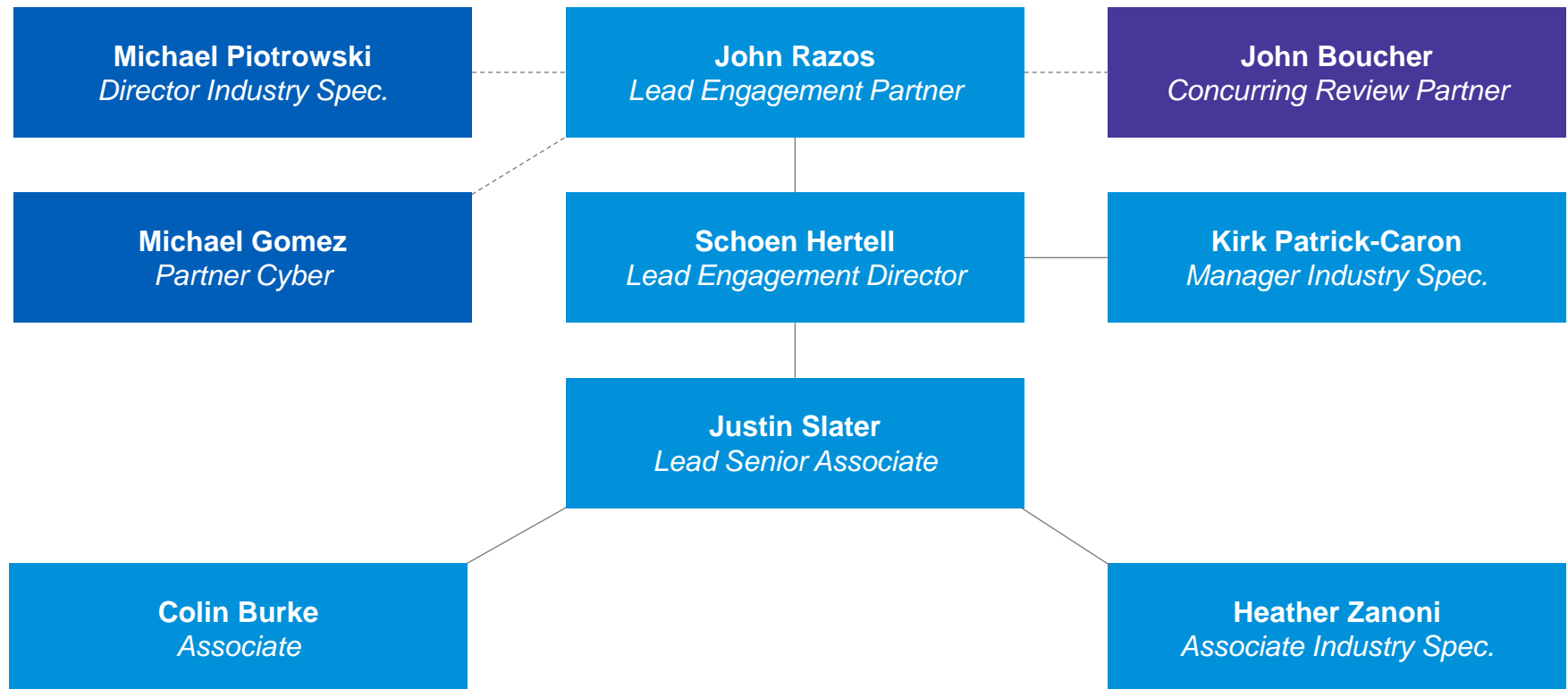




Agenda

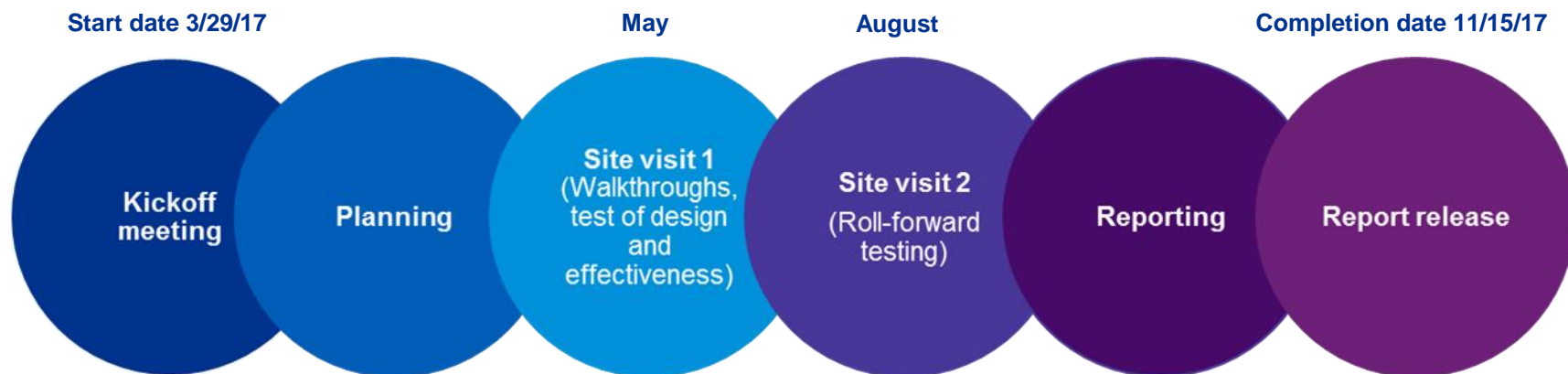
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KPMG Engagement Team



2017 SOC 1 Update and Scope

2017 SOC 1 testing timeline and key milestones



SOC 1 status update

- **AICPA SSAE 18 standard:** procedures, opinion, and management assertion.
- **Integration of Identity Access Management (IAM)**
- **Site visit 1 procedures completed:** walkthroughs, test of design and test of effectiveness of control activities for the period October 2016 through mid May 2017.

Next steps

- **Finalize site visit 2 procedures:** test of effectiveness of control activities for the period mid May 2017 through August 2017.
- **Post site visit 2 (September - November):**
 - Roll forward procedures to period end date of 9/30/17
 - SOC report drafts
 - Management assertion
 - Representation letter
 - SOC report release

2017 SOC 1 Update and Scope (cont.)

SOC 1 scope

The scope of the 2017 SOC 1 examination covers the control objectives and control activities related to the Bid-to-Bill system during the period 10/1/16 through 9/30/17, grouped as follows:



Market operations and settlement processes

- Market Information System (MIS)
- Bidding
- Network model update
- Day-ahead scheduling
- External transactions
- Real time scheduling systems
- Locational-Based Marginal Pricing (LBMP) and ancillary services pricing
- Automatic Generation Control (AGC)
- Emergency and supplemental resource evaluation
- Installed Capacity (ICAP)
- Transmission Congestion Contracts (TCC)
- Reliability demand response programs
- Regional market coordination
- Market Mitigation and Analysis (MMA)
- Market analysis
- Credit
- Customer settlements
- Cash clearing
- Regulatory affairs



Information technology controls

- Information technology and IT technical security groups
- Logical security
- Physical security
- IT change control
- Project management life cycle and software development life cycle
- IT operations

2017 SOC 1 Update and Scope (cont.)

Excluded Processes

Reliability related processes	Other models and estimators
Operational area outside the market operations and settlements processes and systems	Dispatch and state estimator models or models used in connection with NYISO settlements, locational-based marginal pricing algorithms or other market system calculation algorithms
Operational judgments	Meter data collection
Decisions by the control room operators including generation scheduling and dispatch decisions, the selection of units to provide regulation, special constraint resource and/or operating reserves	NYISO also relies on market participants to perform meter data collection and follow-up
Market monitoring judgmental processes	
Other than the calculation of the marginal cost reference levels	

2017 SOC 1 Update and Scope (cont.)

Pervasive Control Elements

Control Environment

(e.g., integrity and values, commitment to competence, extent of board of directors and audit committee participation, management's philosophy and operating style, organizational structure, assignment of authority and responsibility, and human resource policies and practices)

Information and Communication

(e.g., processes for initiating, recording, processing and reporting transactions as well as maintaining accountability)

Control Activities

(e.g., policies, practices, and procedures that ensure objectives are achieved and risk strategies are carried out)

Monitoring Activities

(e.g., functioning of periodic monitoring such as internal audit as well as other ongoing monitoring over the quality of controls performance)

Risk Assessment

(e.g., operating environment, new personnel, new systems, or new processes or activities)

Appendix – SOC 1 Objective

Objectives are, in all material respects, based on the criteria described in NYISO's assertion, determine whether:

- The NYISO's description fairly presents the Bid-to-Bill system that is designed and implemented throughout the period;
- The controls related to the control objectives stated in the description are suitably designed to provide reasonable assurance that the control objectives would be achieved if the controls operated effectively throughout the period and subservice organizations and user entities applied the complimentary controls assumed in the design of the NYISO's controls throughout the period; and
- The controls operated effectively to provide reasonable assurance that the control objectives stated in the description were achieved throughout the period if complementary subservice organization and user entity controls assumed in the design of the NYISO's controls operated effectively throughout the period 10/1/16 to 9/30/17.

Appendix – KPMG SOC 1 Approach

Overall approach

- The examination of the control activities is performed in accordance with AICPA attestation standards (SSAE 18).
- We consider the NYISO's control environment for the purpose of establishing a basis for determining the nature, timing and extent of examination procedures necessary to express our opinion.
- We evaluate the results of internal audits and external reviews to determine the impact on the SOC 1 examination.

Nature of procedures

- We use a combination of inquiry, observation, inspection of documents, re-performance, and analysis of system records and queries.
- Process level automated controls are identified and tested as application controls, helping reduce manual repetitive testing.

Appendix – KPMG SOC 1 Approach (cont.)

Timing of procedures

- Timing of each field visit is coordinated between internal audit and business process owners to reduce impact on the NYISO personnel.
- There are two site visits to reduce impact on the NYISO personnel.
- First site visit (May 2017) – Focuses on the test of design and operating effectiveness of the manual and automated controls.
- Second site visit (August 2017) – Focuses on the remaining tests of operating effectiveness for all the control objectives, as well as the reporting phase of our work.

Progress reporting

- During the field visits, we hold status meetings with internal audit and include key management as appropriate to raise and resolve items for discussion on a timely basis.
- Every two weeks, meetings are held with internal audit during off-site periods to maintain continuity, as necessary.



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