BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of

Niagara Mohawk Power Corporation d/b/a National Grid

Cases 17-E-0238 & 17-G-0239

August 2017

Prepared Testimony of:

Staff Information Services Panel

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Aric Rider
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Keith Haugen
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Introductions and Qualifications

Q. Please introduce the members of the Staff Information Services Panel.

A. The Panel members are Andrew Timbrook, Aric Rider, Allison Manz, and Keith Haugen.

Q. Mr. Timbrook, please state your name, employer, and business address.

A. My name is Andrew Timbrook. I am employed by the New York State Department of Public Service (Department) as a Utility Engineer II. My business address is Three Empire State Plaza, Albany, New York 12223.

Q. Mr. Timbrook, please briefly state your educational background and professional experience.

A. I received a Bachelor of Science Degree in Civil Engineering from the University of Pittsburgh in 2010. After graduating from the University of Pittsburgh, I worked for Hunt Engineers, Architects and Land Surveyors from 2011 to 2012, where my responsibilities included modeling municipal water systems and designing utility systems. In 2012, I joined the Gas and Water Rates Section of the Department as a Junior

Engineer. In my current role as Utility Engineer 2 in the Gas and Water Rates Section of the Office of Electric, Gas and Water, I work on gas and water rate cases filed by utilities.

Q. Have you previously testified before the New York State Public Service Commission?

A. Yes. I previously provided testimony in Case 13-W-0295, United Water New York, Inc., regarding non-revenue water (which I will refer to as “NRW”), sales and revenue forecast, the revenue reconciliation mechanism, and proposed tariff changes; Cases 13-W-0539, 13-W-0564, and 14-W-0006, United Water New Rochelle and United Water Westchester, regarding rate design, NRW, and proposed tariff changes; Case 14-G-0494, Orange and Rockland Utilities, Inc., regarding cost of service study, revenue allocation, and rate design; Case 16-W-0130, Suez Water New York, Inc., regarding rate design, NRW, and conservation; and in Case 16-W-0259, New York American Water Company, Inc., regarding revenue allocation and rate design.

Q. Mr. Rider, please state your name, employer, and business address.

A. My name is Aric Rider. I am employed by the Department and my business address is Three Empire State Plaza, Albany, New York 12223.
Q. Mr. Rider, in what capacity are you employed by the Department?
A. I am a Utility Supervisor in the Office of Electric Gas and Water, Gas and Water Rates Section.
Q. Mr. Rider, are your credentials contained in the Staff Policy Panel testimony?
A. Yes.
Q. Ms. Manz, please state your name, employer, and business address.
A. My name is Allison Manz. I am employed by the Department and my business address is Three Empire State Plaza, Albany, New York 12223.
Q. Ms. Manz, in what capacity are you employed by the Department?
A. I am a Supervisor in the Office of Accounting, Audits and Finance
Q. Ms. Manz, are your credentials contained in the Staff Policy Panel testimony?
A. Yes.
Q. Mr. Haugen, please state your name, employer,

and business address.

A. My name is Keith Haugen. I am employed by the Department as a Utility Analyst 3 – Cyber Security, assigned to the Utility Security Section within the Office of Electric, Gas and Water. My business address is Three Empire State Plaza, Albany, New York 12223.

Q. Please provide a summary of your educational and professional experience

A. I received a Bachelor of Science Degree in Information Technology from Empire State College. I am also certified as a Certified Information Systems Security Professional (CISSP) and a GIAC Systems and Network Auditor (GSNA). Beyond that, I have attended numerous courses and workshops on cyber security. My previous professional work experience consists of five years as a computer programmer for Newkirk Products, where I started as a junior programmer and worked my way up to senior programmer. I also became supervisor of my unit, overseeing the work of up to seven programmers of varying skill levels. For two years following Newkirk, I developed workflow

applications for Higher Education Systems Corporation as an IT Specialist 2.

Q. Please describe your current duties with the Utility Security Section.

A. I joined the Utility Security Section in 2008. My current responsibilities include conducting cyber security vulnerability assessments of critical facilities and corporate IT systems, which are owned and operated by the energy, gas, telecommunications, and water utilities.

Q. Have you previously testified before the Commission?

A. Yes. I testified on behalf of the Utility Security Section in Case 16-E-0060 and 16-G-0061, Consolidated Edison Company of New York, Inc.

Summary of Testimony

Q. What is the purpose of the Panel's testimony in this proceeding?

A. Our testimony will summarize Niagara Mohawk Power Corporation d/b/a National Grid's (Niagara Mohawk or Company) request for its new Information Services, or IS, programs and projects, discuss Staff's review process,

including the review of Cyber Security projects, recommend a number of adjustments related to the proposed IS projects, and make recommendations to improve the transparency of the Company's IS sanctioning and reporting processes going forward.

A. What adjustments are you recommending to the Company's proposed IS investments?

A. We recommend the following revenue requirement adjustments: (1) an adjustment to remove several projects from the Rate Year, or the twelve months ending March 31, 2019; (2) a slippage adjustment to capital expenditures and associated operating and run the business expenses; (3) an adjustment to operating expenses to reflect a normalized level of operating expenses as a percentage of capital spending; and (4) an adjustment to the National Grid USA Service Company (National Grid or Service Company) return on IS capital investments. We also will discuss unquantified savings arising from the IS investments that we provided to the Staff Policy Panel for its consideration on productivity. Finally, we

recommend a downward-only reconciliation of capital expenditures associated with Niagara Mohawk's Service Company Rent expense.

Q. In your testimony, will you refer to, or otherwise rely on, any information obtained during the discovery phase of this proceeding?

A. Yes. We rely on several responses provided by the Company to information requests, or IRs. These responses are included in Exhibit___(SISP-1), and will be identified using the reference number originally assigned by the Department. For instance, the Department's first IR was identified as "DPS-001."

Q. Is the Panel sponsoring any other exhibits?

A. Yes, we are sponsoring the following additional exhibits:

- Exhibit___(SISP-2), which presents National Grid's historic and projected IS capital budgets;
- Exhibit___(SISP-3), which presents schedules that support our recommended adjustments.

The Company's Proposal

Q. What is Information Services or IS?

A. According to pages 9 to 10 of the pre-filed direct testimony of the Company's Information Services (IS) Panel, IS "provides, maintains, and manages the computer hardware, computer software, cyber security, telecommunications and other relevant infrastructure, systems and services across all of National Grid's service territories." The Company explained that IS has three main categories of services – development/delivery services, which include identifying technology trends and developing technological solutions for the business; support and maintenance services, which provide ongoing support for business applications and infrastructure; and end user services, which include items such as desktop and e-mail services, communications media, and printer or fax support.

Q. Does Niagara Mohawk develop its own IS projects?

A. No. As the majority of IS projects are used by multiple operating companies subsidiary to the Service Company, IS projects are designed and accounted for by the Service Company. The associated project costs are allocated to the

appropriate operating companies using the various allocation factors shown in Exhibit___(ISP-1).

Q. Describe the Service Company's proposed IS platform investments.

A. The Service Company is planning a substantial investment in IS for its seven subsidiary operating companies in the Northeastern United States, including Niagara Mohawk. The Service Company forecasts incremental capital expenditures of $606 million from the start of the Rate Year through the end of fiscal year 2021 on various IS projects, which includes $286 million in the Rate Year. This compares to the most recent five year average of annual capital spending of $111 million. It also forecasts "run the business" (RTB) and operating expenses of approximately $350 million for all projects over the same period. This compares to $218 million of RTB and operating expenses in the historic test year, which is the twelve months ending December 31, 2016.

Q. Why is the Service Company making this investment in its operating companies?

A. The Company provides several reasons for the Service Company's investment plans. First, Niagara Mohawk argues that the average age of its IS platforms is advanced, with many platforms having outlasted their vendor support. In response to DPS-432 and DPS-704, the Company states that the average age of Niagara Mohawk's IS systems is 11 years, and the average age of IS systems across the Service Company and all operating companies is 12.3 years. Niagara Mohawk noted that, in contrast, the industry average age of IS systems is 5 to 7 years. The Company also states in its response to DPS-704 that 97 percent of 357 applications across the Service Company and its operating companies have at least one core component that no longer has vendor support, including all 14 applications that are used solely by Niagara Mohawk.

Second, the Company claims that a portion of the investments are needed to address mandates from the New York State Public Service Commission, or PSC, that require enhanced capabilities for customer service and operations platforms.

Third, the Company wants to improve its gas safety compliance performance and believes that the IS investments will assist in doing so.

Fourth, Niagara Mohawk advocates that IS investments are needed for enhanced customer service to meet evolving customer and business demands by improving data access and management and applications.

Fifth, the Company proposes a Human Resources Simplification Program, or HRSP, to improve its human resource systems, processes, and data.

Q. Are the IS investments divided into spending categories?

A. Yes. As shown in Exhibit___(RRP-3), Schedule 9, IS Investments are broken down into the following nine categories: Cyber Security, Physical Security, FY18 Plan, Growth Playbook, PSC Mandate, Other Mandates, Tech Modernization, Grid Modernization, and Gas Business Enablement or GBE.

The Development of the IS Investment Plan

Q. Describe the Service Company's proposed IS capital spending plan for the period FY 2019

through FY 2021.

A. As shown in Company Exhibit___(ISP-3), the proposed IS spending levels are $286 million, $205 million, and $115 million for fiscal years 2019 through 2021, respectively, for the Service Company.

Q. Describe the Company's corporate budgeting process.

A. In response to DPS-076, the Company described its corporate budgeting process. The Company states that the budgeting process begins each May, wherein IS capital budgets are developed, projects are prioritized, and estimates refined for the upcoming fiscal year, which begins the following April. In September, the associated operating expenses are developed by using historical spending trends and estimating the impact of any new projects. In November, the investment plan is submitted to the global and U.S. Chief Information Officer for approval. After implementation of the investment plan in the following April, the Company performs monthly reporting and tracking of projects and costs to provide spending oversight.

Q. Is the Company’s corporate IS budgeting process similar to the process used by the electric and gas businesses?

A. Yes.

Q. Is the Company’s corporate IS budgeting process appropriate?

A. Yes, the process is appropriate.

Q. How does the Company estimate its Rate Year budget for the proposed IS investments?

A. The Company’s proposed Rate Year budget is composed of individual project budgets in each budget category.

Q. Describe the typical life cycle of an IS project and how the individual project budgets are developed.

A. In a technical session the Company explained the five stages of an IS project life cycle: pre start-up, start-up, requirements and design, development and implementation, and close.

Q. Describe each life cycle phase.

A. The pre start-up phase frames the problem and begins to develop scope, context, and cost estimates for a solution. The information gathered in the pre start-up phase is

incorporated into the Investment Request Summary, or IRS, which considers the cost estimate of the project to have a plus 200 percent or minus 50 percent accuracy. The project then moves to the start-up phase, where a project manager is assigned and a work plan is developed. The assigned team refines the project estimates to an accuracy of plus or minus 25 percent and develops a partial sanction. After the partial sanction is approved, the project moves to the requirements and design phase where the team works with the business requesting the solution to refine the user and technical requirements. Designs ensue and solutions are selected with estimated costs of plus or minus ten percent. The IS team incorporates their work into a sanction paper and it is sent for approval following the corporate guidelines previously mentioned. Next, the IS team builds the solution and tests that it operates as required and designed in the development and implementation phase. The solution is implemented and the transition begins with necessary support provided.

Finally, a closure paper is developed to ensure a clearly documented conclusion to the project activity.

Q. Did you, or members of Staff under your supervision, conduct a review of projects in each budget category?

A. Yes. A sampling of projects was examined to determine the need, timing, scope, and cost of each project reviewed. In the response to DPS-275, IRS or sanction papers were provided for each project, depending on the current stage of project development.

Q. Describe the project sanctioning process.

A. The sanctioning process identifies the appropriate spending levels, by specific programs or projects. It is the process used to seek and obtain approval to spend money on project development. The sanction request may address the full project cost, or a partial sanction may be submitted to request sufficient funding to advance a larger project to the next stage of development.

Q. What types of sanctions does the Company employ for IS capital programs or projects?

A. There are four types of sanctions: partial sanctions, sanction papers, re-sanctions, and a closure paper. A partial sanction paper is generally submitted to advance a project when a sanction paper cannot be submitted due to a lack of complete scope and final cost. A sanction paper is prepared for the full scope and cost of the project and is considered the final approval to undertake the project. A re-sanction must be filed within 60 days of notification that the cost of a project is forecast to vary outside of the tolerance approved in the sanction paper. A closure paper is prepared at the completion of a project that details the final objectives and outcomes of the project.

Q. What information is contained in the sanction papers?

A. Generally, sanction papers provide cost and project details, as well as potential alternatives and the ramifications of those alternatives, so that the Company can make informed decisions regarding capital projects, including the risks and benefits to the Company and its customers. More specifically, the

sanction paper includes a summary of the amount being requested for sanctioning, broken down into capital and operating expenditures by year, and a brief description of the project, including what is being proposed, what is being replaced, drivers, background, benefits, and any business or customer issues. As some sanctions can be done for multiple projects, a summary of projects is listed. The prior sanctioning history shows each partial or prior sanction before the current sanction paper, along with the sanctioned amount, the next planned sanction, all key milestones, and the cost estimation tolerance around the sanction requested amount. Each sanction paper categorizes the project as mandatory, policy-driven, justified net present value or other.

Q. Please continue.

A. Each sanction paper also defines an asset management risk score, risk driver, complexity level, and hazard assessment. The resources to complete the project, whether internal or external, availability of those resources, and any potential operational impact are also noted.

The project alternatives that were considered are listed, along with potential risks faced in project implementation. Any cost assumptions and cost benefit analysis or net present value analysis performed are listed, or marked not applicable. The recovery of the project costs and financial impact to the Service Company are defined. If a fully developed sanction is completed, there will be an estimate of expected implementation operating costs and ongoing run the business expenses. Finally, a list of operating companies that will benefit from - and pay for - the project is included, with a plan for customer outreach, if applicable.

Q. Do all papers in the sanctioning process include all of the information you described?

A. No. Depending on the status of a project’s development, it may be in different stages of sanctioning and only preliminary information is included in the documentation.

Q. What information is contained in the IRS papers?

A. The IRS shows the key personnel involved in developing the project, as well as the project category, primary policy driver, description and

background, expected benefits, scope, dependencies, and assumptions. Estimated costs by year are listed, as well as costs by delivery phase. A breakdown of the project prioritization and cost by capital, operating, and expected run the business costs is included, along with a score for investment risk and complexity. An estimate of the resources needed to complete the project, the key, known milestone dates, and benefitting operating companies are also listed.

Q. Why is less information available in the IRS papers?

A. IRS papers may contain less information, or more broadly defined information, than full sanction papers because, as described previously, these are used at the earliest stage of project development.

IS Investment Recovery

Q. How do the Service Company IS expenditures impact the Niagara Mohawk revenue requirement?

A. As previously mentioned, IS project costs are incurred at the Service Company level. The costs are then allocated to the individual

operating companies that use the IS services. Niagara Mohawk thus is allocated its proportionate share of IS project costs for each solution it utilizes that was developed or obtained by the Service Company.

Q. What types of IS costs are allocated to Niagara Mohawk?

A. The Company divides its IS program costs into three categories: capital expenditures, operating expenses, and “run the business,” or RTB, expenses.

Q. Please describe the capital expenditures category.

A. Capital expenditures represent the costs to buy or create the project that will be included as an asset at the Service Company. Exhibit___(ISP-3) shows the forecast capital expenditures, by project, for the Rate Year, as well as for fiscal years ending March 31, 2020 and March 31, 2021. This Exhibit lists over 330 IS projects, or modules, with Service Company capital expenditures totaling $285.927 million in the Rate Year.

Q. How do these capital expenditures translate to

the Company's Rate Year revenue requirement?

A. Once the project is closed to plant in service on the Service Company's books, the Service Company begins to charge Niagara Mohawk for its portion of the amortization expense of the project, as well as a return on the unamortized project costs. This process is similar to that used for "traditional" electric and gas plant, whereby the Company incurs depreciation expense and also earns a return on the net book value when the plant is included in rate base.

Q. Do the IS assets move to the Company's books after being placed in service?

A. No. These assets remain on the Service Company's books after Niagara Mohawk begins using them. The Service Company recovers both the return on and the return of the IS asset investment through Service Company Rent expense, which is a component of Operations and Maintenance expense, or O&M. Service Company Rent expense is shown in the Company's Exhibit___(RRP-3), Schedule 9.

Q. How much Service Company Rent expense does the Company forecast incurring during the Rate Year?

A. The Company forecasts $41.226 million and $9.172 million of Rate Year Service Company Rent expense for its electric and gas businesses, respectively. Of this amount, $25.725 million and $4.645 million is for existing electric and gas projects, respectively, and $15.501 million and $4.526 million is for new electric and gas IS projects, respectively.

Q. Please describe the IS operating expenses.

A. As described on pages 50 to 51 of the IS Panel's Direct Testimony, operating expenses are the upfront costs associated with the start-up and application development phase of the IS projects. These costs are spread throughout multiple components of the revenue requirement.

Q. How are operating expenses incurred in the historic test year reflected in the Rate Year revenue requirement?

A. As shown in Exhibit___(ISP-8), the Service Company incurred operating costs of approximately $11.8 million in the historic test year. The Company refers to these operating expenses as "IS Base" and these expenses are spread throughout a number of cost components,

including labor and other expense. The Company expects the level of operating expenses incurred in the historic test year to continue in the Rate Year. After accounting for inflation and allocations to Niagara Mohawk, the various components of the Rate Year revenue requirement include approximately $2.956 million and $0.567 million of these expenses for the electric and gas businesses, respectively.

Q. What level of operating expenses associated with new IS projects are forecast to be incurred during the Rate Year?

A. As shown in Exhibit___(ISP-7), the Service Company expects to incur an additional $26.279 million of operating expenses in the Rate Year associated with new IS projects, not including the GBE and Grid Modernization initiatives. After allocation to Niagara Mohawk, these forecast costs result in incremental Rate Year expenses of $4.156 million and $0.797 million for electric and gas operations, respectively. These expenses are included in the Other Initiatives expense line in O&M, as shown in Exhibit___(RRP-3CU), Schedule 27. Additionally,

the calculation is shown in Exhibit___(SISP-3).

Q. Does the Rate Year revenue requirement reflect upfront operating expenses for GBE and Grid Modernization?

A. Yes. The Company included electric and gas operating expenses of $0.198 million and $9.631 million, respectively, to implement GBE. The Company also included $16.210 million and $0.028 million of upfront Grid Modernization expenses for electric and gas, respectively, as shown in the Company's response to DPS-607. These expenses are included in the Other Initiatives expense line in O&M, as shown in Exhibit___(RRP-3CU), Schedule 27.

Q. Please describe the IS RTB expenses.

A. As explained on pages 50 to 51 of the Company's IS Panel Direct Testimony, RTB expenses are on-going costs incurred to operate and maintain the applications, including licensing fees. Similar to the upfront operating expenses, run the business expenses are included in many areas of the revenue requirement.

Q. How are run the business expenses incurred in the historic test year reflected in the Rate

Year revenue requirement?

A. As shown in Exhibit___(ISP-8), the Service Company incurred approximately $206.1 million of run the business costs in the historic test year. These costs are referred to as "Operational Costs" and are spread throughout multiple cost components, including labor and other expense. The Company expects the level of RTB expenses incurred in the historic test year to continue in the Rate Year. After accounting for inflation and allocations to Niagara Mohawk, the various components of the Rate Year revenue requirement that include these Operational Costs total approximately $51.633 million and $9.907 million for the electric and gas businesses, respectively.

Q. What level of RTB expenses will be incurred during the Rate Year for new IS projects?

A. As shown in Exhibit___(ISP-7), the Service Company expects to incur an additional $16.455 million of run the business expenses in the Rate Year associated with new IS projects, not including GBE and Grid Modernization. After allocation to Niagara Mohawk, this results in

incremental Rate Year RTB expenses of $2.602 million and $0.499 million to electric and gas operations, respectively. These costs are included in the Other Initiatives expense line in O&M, as shown in Exhibit___(RRP-3CU), Schedule 27. Additionally, the calculation is shown in Exhibit___(SISP-3).

Q. Does the Rate Year revenue requirement reflect RTB expenses for GBE and Grid Modernization?

A. Yes. The Company included gas run the business expenses of $1.200 million for GBE, and electric RTB expenses of $3.640 million for Grid Modernization. These expenses are included in the Other Initiatives expense line in O&M, as shown in Exhibit___(RRP-3CU), Schedule 27.

Q. Please summarize the Company’s Rate Year revenue requirement as it relates to IS projects.

A. The Company has included approximately $122.622 million and $31.801 million of IS-related costs in the revenue requirements for its electric and gas businesses, respectively. This is comprised of electric and gas capital-related costs of $41.226 million and $9.171 million, respectively, which are incurred as Service

Company Rent expenses; upfront electric and gas operating expenses of $23.520 million and $11.024 million, respectively; and $57.875 million and $11.606 million of electric and gas RTB expenses, respectively.

Q. How much of this revenue requirement is incremental to what was included in the historic test year and associated with new IS projects?

A. Of the amounts previously provided, approximately $42.307 million and $16.682 million is incremental. This is comprised of incremental Service Company Rent expense of $15.501 million and $4.526 million, upfront operating expenses of $20.564 million and $10.457 million and RTB expenses of $6.242 million and $1.699 million for electric and gas operations, respectively.

Staff Review Process

Q. Describe the process you used to review the Company's existing IS investments.

A. For existing IS projects, where the costs have already been incurred prior to the beginning of the Rate Year, we selected a sample of projects and reviewed the associated sanction papers, the

capital costs incurred, and the amortization period and bill pool used in calculating Niagara Mohawk's Service Company Rent expense.

Q. Describe the process you used to review the Company's proposed IS investments.

A. For the proposed new IS projects, which result in the incremental costs discussed above, we performed a more thorough, multi-pronged review. We held several technical sessions with the Company to discuss its budgeting process, proposed IS investment plan, and the cost estimation and implementation planning process. We also discussed the goals and objectives of the IS investments. Next, we reviewed the Service Company's historic IS capital spending from Fiscal Year 2013 to Fiscal Year 2017 to gauge its ability to complete IS projects. This included evaluation of estimated and actual project costs. Finally, we reviewed the proposed IS projects and associated expenses. This review included an examination of the documents used to address issues, or Investment Request Summaries and sanction papers, the process used to select the individual project

and to sanction spending on the projects, and the estimated project costs and savings. Later in our testimony, we compare and contrast this process with our review of electric and gas investment plans, and propose measures needed to align the review processes of all three asset classes.

Q. What approvals are needed before a IS project may proceed?

A. Like traditional electric and gas projects, specific delegation of authority approval must be obtained before any IS project can proceed. The delegation of authority approval process includes the review of sanctioning documentation for IS capital projects. The IS sanction process follows the standard US Sanctioning process for electric and gas projects, wherein all IS projects valued over $1 million (for both capital expenditures and operating expenditures, combined) must be approved by the US Sanctioning Committee. Projects under the $1 million threshold are approved by the IS Sanctioning Committee.

Q. Did you also review the Service Company’s IS

budgeting process?

A. Yes. As explained in the Company's response to DPS-076, the same corporate process and timeline that is employed for electric and gas capital investments is used for IS investments.

Historic Review

Q. What did you observe when you reviewed the historic IS capital spending?

A. We made several observations. First, the Company reports on each of its IS projects or modules by month for each of the periods reviewed. Second, the actual IS capital spending levels in fiscal years (FY) 2013 through 2017 were $149 million, $75 million, $85 million, $94 million, and $153 million, respectively. Lastly, we observed that there are significant variances between the Company's capital budgets and the amount expended in any given year.

Q. Please explain the actual to budget variances you noted in your review.

A. As shown in Exhibit___(SISP-2), which was developed using the Company's response to DPS-077, there was a significant variance in actual

to budgeted spending in each of the last five fiscal years, FYs 2013 through 2016. In each of those years, the Company underspent its annual budget by an average of $42 million, or 28 percent. The most significant underspend was in FY 2014, when the Company underspent its $167 million budget by $92 million, or 55 percent. More recently, however, the Company has exceeded its budget. In FY 2017, the Company reports that it significantly exceeded its budget, with spending of $153 million, or 69 percent, over its budget of $91 million. However, $73 million, or 48 percent, of the FY 2017 overspend was incurred in March, which is the last month of the fiscal year. We will address this abnormality later in our testimony.

Q. What is your opinion of the Company's proposed IS capital budgets considering its historic IS spending performance?

A. Despite historical IS budgets being significantly lower than the proposed Rate Year IS budget of $286 million, the Company has consistently under-spent on IS by a large margin. As such, we have serious concerns that

the Company can deliver on its proposal to spend the projected Rate Year IS budget of $286 million.

Cyber Security

Q. What is cyber security?

A. The field of cyber security addresses unwanted intrusions into electronic systems. It is one in which the risks, threat actors/vectors, and technologies involved are constantly changing and increasing in complexity at a breakneck pace. National Grid's network and supporting electronic devices are components of the utility's critical energy infrastructure, and we anticipate that probes and surveillance of these assets will continue, and probably increase in frequency and sophistication.

Q. Please summarize Company proposals regarding cyber security.

A. As detailed in Exhibit___(ISP-5), the Service Company plans to complete six cyber security-related projects in the Rate Year and eight such projects in the subsequent two fiscal years. The Service Company reports that it also will place many cyber security programs in service

during the bridge period between the historic test year and the Rate Year. According to the Company, these projects will address a wide range of cyber security issues that include protecting utility networks and systems in real time, supporting critical reliability functions, strengthening capabilities to ensure that access and functions are available only to authorized utility personnel, and modernizing the utility's cyber security framework.

Q. What cyber security costs does the Service Company project to incur during the Rate Year?

A. The Service Company projects to incur $7.9 million in capital expenditures, $1.6 million in operating expenses, and $5.3 million in RTB for the Rate Year, as detailed in Exhibit___(ISP-3) and Exhibit__(ISP-7).

Q. Does the Panel agree that these investments are needed to meet a growing security threat?

A. Yes. These investments reflect the growing importance of ensuring adequate cyber security for utility systems and software. Such threats are real, and could have significant, widespread consequences if successful. In 2016, for

instance, National Grid was advised by American and British governmental agencies of a real threat of a malicious cyber-attack against its energy networks. The implementation of cyber security countermeasures is essential to establish a high level of monitoring and protection against these threats. We agree that the proposed investments in this area are reasonable.

Q. Does the Panel have any further recommendations relevant to the Company's cyber security investments?

A. Yes. We are recommending adjustments to the Company's total IS budget for the Rate Year. The adjustments are necessary to align the Company's planned spending level with the volume of work that it reasonably may be able to complete during the Rate Year. As always, it is the Company's responsibility to manage, prioritize, and sequence project investments to provide safe and adequate service. Given this discretion and flexibility, and in consideration of the fact that the proposed cyber security investments are modest in scope but critical to

safeguarding the Company's systems, we recommend that the Company prioritize the cyber security investments to ensure that they are completed during the Rate Year as proposed.

Staff Adjustments

Analysis of specific projects

Q. Please explain the adjustments pertaining to the specific projects that Staff recommends be removed from the Rate Year.

A. Staff has made adjustments to remove a number of discrete projects from the Rate Year revenue requirement. The Staff AMI Panel will discuss adjustments related to AMI projects. The Staff Electric Infrastructure and Operations Panel will discuss adjustments related to the Distributed Generation Interconnection Online Application Portal, or DGIOAP (INVP #4704F), Load and DER Forecasting (INVP #4729), and the System Control and Data Acquisition, (D-SCADA) projects (INVP # 4704G). The Staff Consumer Services Panel will address the Customer Bill Redesign project (INVP #4704Q).

Q. What adjustments are you recommending to account for the Staff proposals to remove these specific

projects from the revenue requirements?

A. Our adjustments reduce the Rate Year Service Company IS capital expenditures by $35.075 million. This brings the Company's proposed spending level of $286 million down to $251 million. It also results in the following Rate Year revenue requirement adjustments: a reduction to IS Service Company Rent expense for the electric and gas businesses by $1.361 million and $0.506 million, respectively; upfront electric and gas operating expenses by $6.308 million and $0.013 million, respectively; and ongoing run the business costs by $0.977 million and $0.006 million for the electric and gas businesses, respectively. The reductions in operating and run the business expenses are reflected in the Other Initiatives expense line item. These calculations are shown in Exhibit___(SISP-3).

Slippage

Q. What is slippage?

A. Slippage is essentially a variance. It represents the difference between forecast expenditures and actual work completed.

Slippage can be a result of not completing work when expected, or completing the work at a different cost than originally forecast.

Q. What is a slippage adjustment?

A A slippage adjustment reflects a decrease to Rate Year capital expenditures based on the review of past spending variances.

Q. Has the Commission previously utilized slippage adjustments to establish a forecast of traditional electric and gas capital expenditures?

A. Yes. In the past, the Commission has utilized slippage adjustments to establish a rate year forecast of capital spending. However, the capital reporting and review process has been improved over the years to the point where companies regularly report to Staff and the Commission, and, in rate proceedings, Staff reviews every major capital project and program that companies include in rate cases. Based on that current process, Staff may recommend specific adjustments be made due to the need, timing, and/or cost of individual projects. Additionally, Staff meets with companies between

rate cases, on a quarterly basis, to go over project changes, variance reporting, and any new projects that the companies claim to be needed. This comprehensive level of review and monitoring significantly reduces the need for a general slippage adjustment.

Q. Why is a slippage adjustment appropriate in this case?

A. The project-specific review and real-time monitoring process we described above has been applied primarily to capital investment plans for electric and gas assets. A comparable process for IS investments, however, needs to be developed. Later in our testimony, we recommend that the Company implement a specific process to align the planning and review of its IS capital investments with the planning and review of its more traditional electric and gas capital investments, but it will take some time for that effort to mature. An interim measure is needed to protect customers from unreasonable or inaccurate rate year forecasting which may occur due to the combined effects of an unclear estimating process and a significant increase in

capital spending that may not be achievable. Under these circumstances, the more general slippage adjustment would serve as a stop-gap measure that provides critical protection for customers while a more comprehensive review and monitoring system is put in place for the Company's IS investments.

Q. What slippage adjustment do you recommend?

A. We recommend that a 37 percent slippage adjustment be applied to the Company's Rate Year IS spending levels that are reflected in the revenue requirement. This adjustment was based on a historical multi-year average of actual-to-budget spending for IS projects.

Q. How did you calculate the 37 percent adjustment?

A. As previously discussed, the Company provided in response to DPS-077 its actual and budgeted monthly spending, at the Service Company level, for all IS projects for fiscal years 2013 to 2017. After reviewing this information, we found that fiscal years 2013 and 2017 are outliers and should be removed for the purpose of determining a historical annual average level of variance.

Q. Why did you conclude that fiscal year 2013 is an outlier that should be excluded from the multi-year average?

A. The Staff GBE Panel explains in its testimony that the Service Company's U.S. Foundation Project, or USFP, which was implemented in 2012, was an unusual project in terms of its size and overall scope. The USFP was intended to replace and integrate multiple systems and processes across National Grid's operating companies. These systems included Human Resources, supply chain, finance, customer master data, non-utility billing, supplier self-service, business information warehouse, and business objects planning and consolidation. The USFP also was unusual in that significant problems occurred during implementation, including payroll processing and supply chain issues. A large portion of the USFP costs occurred in fiscal year 2013, which ended March 31, 2013. Projects of the scope and cost of USFP are not common and, therefore, the costs associated with it are not representative of spending in a typical year. For these reasons, we excluded fiscal

year 2013 data from our multi-year average.

Q. What USFP costs were included in the fiscal year 2013 data?

A. The Company's response to DPS-077 indicates that the USFP – included in the responsive information as project 2547, "USFP-PMO" - had actual capital spending of $64.5 million in FY 2013. This represented 43 percent of the $149 million actually spent in this year. The fact that one project accounted for almost half of the annual spending reinforced our decision to treat this fiscal year as an outlier for purposes of the multi-year average.

Q. Why did you conclude that fiscal year 2017 also is an outlier?

A. As shown in the Company's response to DPS-077, fiscal year 2017 had an IS budget of $90.725 million but actual spending of $153.257 million. That is, in fiscal year 2017, National Grid exceeded its IS budget by $62.531 million, or 69 percent. Significantly, however, the Company's data show that $73.610 million, or 48 percent, of the actual fiscal year 2017 spending was incurred in March, which is the last month of

the fiscal year.

Q. Why are the costs incurred in March 2017 so high?

A. We do not know. However, when looking at the data, the costs incurred in March dramatically exceed the costs incurred in any other month of the fiscal year. The Company's response to DPS-077 shows monthly spending from December 2016 through March 2017 of $8.286 million, $18.990 million, $12.854 million, and $73.610 million. Additionally, monthly spending from April 2017 through July 2017 was $14.606 million, negative $6.156 million, $7.119 million, and $4.156 million. Spending in March 2017 thus exceeded the next-highest monthly spending level of $18.990, incurred in January 2017, by $54.62 million, or almost 288 percent.

Q. Did you examine monthly spending in other years to determine whether there is a pattern of costs spiking in March?

A. We did, and there is no obvious historic parallel. Although the charges incurred in March typically were higher than the costs incurred in other months, the costs incurred in

March from 2014 through 2016 were $16.345 million, $9.252 million, and $10.964 million, respectively; all well below the $73.610 million spent in March 2017. On a percentage basis, spending in the month of March in years prior to 2017 accounted for 22 percent of the expenditures in 2014, 11 percent of annual expenditures in 2015, and 12 percent of annual expenditures in 2016. None of these monthly totals, on a dollar or percentage basis, come close to the charges incurred in March 2017.

Q. Are you saying that the capital costs the Company claims were incurred in March 2017 should be disallowed?

A. No. Our point is that, due to the significant abnormality of these monthly costs, the data for fiscal year 2017 should be excluded from the inputs for determining a multi-year average slippage adjustment.

Q. How did you calculate the historic slippage adjustment?

A. After removing these outliers, and focusing on fiscal years 2014 through 2016 to provide recent historic data, we compared the budgeted and

actual spending for these fiscal years. We determined that, on average, the Service Company historically spent approximately 37 percent less than its budget on an annual basis.

Q. Please specify the IS revenue requirement components to which you applied this slippage adjustment.

A. We applied the slippage adjustment to Service Company Rent expense, upfront operating expenses associated with GBE and Grid Modernization projects, and ongoing run the business expenses.

Q. How did you calculate the slippage adjustment for the Service Company Rent expense?

A. We started with the Service Company Rent expense, net of the adjustments for individual projects previously discussed, of $14.140 million and $4.020 million for electric and gas, respectively. We then reduced these amounts by 37 percent. The adjustment reduces the electric and gas Service Company Rent expenses by $5.175 million and $1.471 million, respectively. These adjustments are shown in Exhibit___(SISP-3).

Q. How did you calculate the slippage adjustment for the GBE and Grid Modernization upfront

operating expenses?

A. We started with electric and gas GBE operating expenses of $0.198 million and $9.631 million, respectively, and Grid Modernization operating expenses of $9.939 million and $0.029 million for electric and gas, respectively, all net of the adjustments for the individual projects previously discussed. We next reduced these amounts by 37 percent. The adjustment reduces the electric and gas operating expenses by $3.710 million and $3.535 million, respectively. These adjustments are included in Other Initiatives expense and shown in Exhibit___(SISP-3).

Q. Why did you apply the slippage adjustment only to upfront operating expenses associated with GBE and Grid Modernization?

A. We are making a separate adjustment to the upfront operating expenses of the remaining projects, which we will discuss later in our testimony.

Q. How did you calculate your slippage adjustment for the ongoing run the business expense?

A. We started with run the business expenses of

$5.265 million and $1.694 million for electric and gas respectively, net of individual project adjustments previously discussed. We next reduced these amounts by 37 percent. The adjustment reduces the electric and gas run the business expenses by $1.927 million and $0.620 million, respectively. These adjustments are included in Other Initiatives expense and shown in Exhibit___(SISP-3).

Upfront operating expenses

Q. Please explain your adjustment to upfront operating expenses.

A. Our adjustment reduces upfront operating expenses for all IS projects, excluding GBE and Grid Modernization projects, by $3.550 million and $0.681 million for the electric and gas businesses, respectively.

Q. How did you calculate your adjustment?

A. We began with our total recommended allowed capital budget of $159.052 million, which is net of the individual project adjustments and slippage adjustment previously discussed. We then removed GBE and Grid Modernization capital costs, net of their slippage adjustment, to

arrive at a net allowed Service Company capital budget of $67.154 million for all projects other than those related to GBE and Grid Modernization.

Q. Why did you remove GBE capital costs?

A. GBE represents different types of projects than have typically been undertaken. GBE is a stand-alone project to replace and consolidate the gas businesses' IS systems. Therefore, the project has significant upfront operating expenses associated with implementation, data transition, and training that would not compare to historic IS operating expense levels. For this reason, historic data is not representative of potential Rate Year spending and does not provide an appropriate basis for the allowed upfront operating expenses for these projects.

Q. Why did you remove Grid Modernization capital costs?

A. Grid modernization projects reflect a significant increase in the Company's requirement to meet real-time data needs as the Company transitions from serving as a traditional utility to serving as the

Distributed System Platform. This transition likely will result in higher upfront operating expenses. Therefore, similar to GBE, historic data is not representative of potential Rate Year spending and does not provide an appropriate basis for the allowed upfront operating expenses for these projects.

Q. Please continue.

A. Given the unique circumstances associated with the GBE and Grid Modernization projects, we only applied the slippage adjustment to the operating expenses for these projects, as previously discussed.

Q. Please continue with the explanation of your adjustment.

A. Based on data provided in the Company's response to DPS-631, we calculated a three-year average operating expense-to-capital expenditures ratio of 17 percent. We applied this ratio to the net allowed capital expenditures of $67.154 million to arrive at a Rate Year forecast of operating expenses at the Service Company level of $11.216 million for projects other than GBE and Grid Modernization. We next compared this amount to

the Company's request of $26.089 million, as shown in Exhibit___(ISP-7), less the operating expense costs associated with the Customer Bill Redesign project, which indicated a reduction of $14.873 million at the Service Company level. Applying the Niagara Mohawk allocation rates of 23.87 percent and 4.58 percent for the electric and gas businesses, respectively, as shown in Exhibit___(ISP-8), we derived operating expense adjustments of $3.550 million for electric operations, and $0.681 million for gas operations. These adjustments are included in Other Initiatives expense and shown in Exhibit___(SISP-3).

Q. Why did you base the upfront operating expense allowances on a historic percentage of capital costs, rather than simply applying the slippage adjustment to the Company's total request?

A. As shown in Exhibit___(SISP-3) and supported by the Company's response to DPS-631, for the years 2013, 2014, 2015, and 2016, the Company incurred operating expenses that were 7 percent, 12 percent, 19 percent, and 20 percent of total capital expenditures, respectively. However,

the Company requested total Service Company operating expenses of $26.279 million in the Rate Year for IS projects, exclusive of GBE and Grid Modernization. This request represents 25 percent of the $106.914 million in capital expenditures incurred for the same projects during that time period. Given the nature of GBE and Grid Modernization, it might be reasonable for future operating expenses to exceed historic costs. However, for all remaining projects, we are not aware of any reason why operating costs should exceed historic expenses by a significant margin. As such, we based our Rate Year forecast of upfront operating expenses on this historic data.

Service Company Asset Recovery Charge

Q. What rate of return did the Company request to apply to the unamortized IS capital costs in the Rate Year?

A. The Company proposed to use a pre-tax weighted average cost of capital of 9.91 percent, which is based on a Return on Equity, or ROE, of 9.79 percent with a capital structure comprised of 50 percent common equity and 50 percent long-term

debt. This is shown on pages 19 to 20 of Company witness Joshua Nowak's Direct Testimony.

Q. Do you agree with Mr. Nowak's proposal to use the Service Company rate of return, which includes a 50 percent common equity ratio?

A. No. We understand that the Staff Finance Panel is recommending for Niagara Mohawk a common equity ratio of 48 percent and a return on equity of 8.25 percent. Accordingly, we recommend that the common equity ratio and cost rates for common equity and long-term debt proposed by the Staff Finance Panel also should be used in the development of revenue requirement for Service Company Rent expense. This would result in a pre-tax weighted average cost of capital of 8.74 percent, which is consistent with the stand-alone Niagara Mohawk rate of return, as shown on Exhibit___(FP-19). We recommend that this rate be applied to assets at the Service Company level so as to avoid imposing unreasonably inflated costs on customers.

Q. What is your adjustment for this reduction in the use of the stand-alone Niagara Mohawk rate

of return?

A. This adjustment reduces electric and gas Service Company Rent expense by $1.044 million and $0.238 million, respectively.

Adjustments Summary

Q. Please summarize your revenue requirement adjustments related to IS projects.

A. Our revenue requirement adjustments decrease, for electric and gas operations, respectively, Service Company Rent expense by $7.580 million and $2.215 million; upfront operating expenses, which are included in Other Initiatives expense, by $13.567 million and $4.230 million; and RTB expenses, which are also a component of Other Initiatives expense, by $2.904 million and $0.625 million.

IS Savings

Q. Did the Company forecast savings associated with IS expenditures in the Rate Year?

A. According to Exhibit___(ISP-7), the Company projects that five IS projects will yield savings in the Rate Year. These savings total $4.063 million at the Service Company level, not including any potential savings from GBE. As

shown in Exhibit___(ISP-8), the Company allocated to Niagara Mohawk 23.87 percent of these savings for electric operations, which equates to $0.970 million, and 4.58 percent for gas operations, which equates to $0.186 million. Additionally, as discussed in the Staff Gas Business Enablement testimony, the Company has forecast Rate Year GBE savings of $0.007 million for gas operations. In total, Niagara Mohawk projects that it will realize savings of $0.970 million and $0.193 million for its electric and gas businesses, respectively.

Q. Is it your opinion that this estimate accurately captures potential Rate Year savings associated with increased spending on IS projects?

A. No. This level of savings seems exceptionally low, particularly given the significant increase in IS investments.

Q. Did you ask the Company if there were additional savings expected or reflected in the revenue requirement?

A. Yes, we asked this question multiple times. In DPS-666, Staff asked the Company to provide the amount of savings expected for each project

listed in Exhibit___(ISP-3). In response, the Company stated that only the five projects identified in Exhibit___(ISP-7), and noted above, might yield Rate Year savings.

In DPS-607, Staff asked the Company to provide the amount of savings included in the revenue requirements for each Grid Modernization project. The Company responded that "there are no specific savings associated with these projects."

In DPS-513, Staff asked if the Company had forecast any savings associated with IS projects in the Other Mandates category. The Company responded that "[t]here may be some efficiencies gained from delivery of these projects, but they are often minimal and are not typically quantified because the primary driver for undertaking these projects is to comply with the required mandate."

In DPS-562, Staff asked if the Company had forecast any savings associated with IS projects in the PSC Mandates category. The Company responded that there were no forecast savings as "PSC mandated projects are primarily undertaken

to ensure compliance with a regulatory order rather than to generate savings. While there may be some efficiencies gained, they are typically qualitative rather than quantitative."

In DPS-605, Staff asked for all savings, by project, that were included in the incremental IS operating expenses and run the business costs that are reflected in Other Initiative expense. The Company again referred to the five projects identified in Exhibit___(ISP-7) as the only projects that yield savings.

In DPS-430, Staff questioned the Company about savings associated with GBE. In response, the Company again showed only $0.007 million in GBE-related savings in the Rate Year.

Q. Did the Company explain why its IS investments would not yield additional savings?

A. The Company has stated that many of these projects were not undertaken to achieve savings. Rather, these projects were implemented to comply with regulatory mandates, achieve policy goals, protect Company systems from unauthorized access, or to enable the Company to offer new products and services. The Company stated that

it does not expect to realize savings from projects that address these goals. Additionally, the Company has stated that some projects will achieve savings, but these savings will not be achieved until after the Rate Year.

Q. Do you agree with this explanation?

A. Partially. First, we recognize that some projects, such as those associated with cyber security, are done to minimize risk and may not yield savings. However, for many of these projects, savings or efficiencies should occur even if the primary purpose is something other than cost reduction. Second, we share the Company's expectation that there will be projects that will yield savings after the Rate Year. We note, however, that 126 of the projects listed in Exhibit __(ISP-3), excluding GBE, have in service dates prior to the beginning of the Rate Year. Of these 126 projects, 15 are physical or cyber security and the remaining 111 are mandated, FY18 plan, Grid Modernization or Tech Modernization. As such, it is reasonable to expect savings during the Rate Year period. The Company, however, has not

estimated such savings in its revenue requirement.

Q. Can you specify any examples of projects that you would expect to yield savings?

A. Yes. Our first example is Project #3882 – NYS Pipeline Safety CMS Regulatory Compliance. The sanction paper for this project states that the current process for producing compliance reports is “manual and very time consuming.” Additionally, the paper states that deferring this project or doing nothing is “not sustainable given the level of manual effort required.” However, despite this elimination of, or substantial decrease in, manual work, the Company did not forecast any savings.

Q. Please explain your second example.

A. The sanction paper for Project #4170 – Time Transformation states that more than 50 percent of time entry is currently captured on paper and then entered manually into the computer system by time keepers. The purpose of the project is to reduce the administrative burden associated with manual time entry. However, the Company has not identified any savings or productivity

gains that would result even though the project would simplify a time-intensive manual process.

Q. Please explain your third example.

A. The sanction paper for Project #4398 - STORMS/ISched Upgrade states that this project will upgrade STORMS work management systems which have become unstable and have experienced multiple outages over the past several years. Reducing or eliminating such outages would reduce the amount of time that Company personnel must spend responding to these outages instead of focusing on their primary work. The Company did not estimate any productivity savings that would be gained by reducing or eliminating this distraction for normal work activities.

Q. Please explain your fourth example.

A. The sanction paper for Project #4188 – Aging System Stabilization states that the project will replace current network systems which are failing or no longer supported by the vendor. As with the prior project, replacement of a failing system should reduce the amount of time that Company employees spend trying to prop up an unreliable system rather than focusing on

their primary work activities.

Q. Please explain your fifth example.

A. The sanction paper for Project #4045 – Double Pole Management states that the project will provide automated interfaces between the National Grid “SmallWorld Geographic Information System (GIS)” STORMS (work management applications), and In-Quest Technologies SmartApp.com Double Pole tracking applications. This will enable electronic recording of new Double Pole tickets and accurate tracking of job status. By automating these interfaces and removing paper forms from the process, error rates will be greatly reduced and the data entry process will streamlined, which, in turn will reduce the number of trips electric engineers must make to the field to verify conditions at the double pole locations. This will improve the management and tracking of double poles in Niagara Mohawk’s service territory. However, despite these improvements in management and tracking of poles and error reductions, the Company did not forecast any savings associated with this project.

Q. Please explain your sixth example.
A. The sanction paper for Project #4464 – Data Visualization states that the project will provide capabilities to enhance data access to very large data sets, analytics, data visualization and export capabilities. This project will replace older reporting tools such as Microstrategy, which has experienced prolonged outages. Additionally, this project will automate standard reports that are currently performed manually. However, despite replacing a system which has had prolonged outages and the transition from manual to automated reports, the Company has not forecast any savings in the Rate Year associated with this project.
Q. Are you making an adjustment to any IS revenue requirement component to impute savings associated with these, and other, projects?
A. No. Despite many IRs asking the Company to quantify benefits associated with IS projects such as these, we have not received any information that would allow us to definitively impute such a savings adjustment. However,

there are numerous projects that reasonably should be anticipated to yield savings. The Company should not be allowed to avoid passing these savings to customers by refusing to acknowledge or quantify such reasonably anticipated savings, or reflect them in the revenue requirements.

Q. Does Staff have any recommendation for how to capture these unquantified but anticipated savings?

A. Yes. The Staff Policy Panel recommends an additional productivity adjustment based, in part, on these unquantified IS savings.

Downward only reconciliation of IS Capital Investments

Q. Is the Panel concerned that the Company will under-spend its Rate Year IS budget?

A. Yes. As previously discussed, the Company's historical data shows that there have been significant historical variances between the capital budget and actual expenditures. As discussed earlier in our testimony, the Company is planning a substantial increase in IS spending. However, the Company has not provided

enough support to show that it can ramp-up hiring and work to fully execute this ambitious spending plan. For these reasons, it is our opinion that there is a significant risk that the Company will again fail to execute its spending plan fully, thereby forcing customers to pay rates based on a level of new plant that is not actually deployed.

Q. Does your slippage adjustment address this concern?

A. Not entirely. Our slippage adjustment, as well as the adjustments to remove specific projects, reduces the allowed Service Company capital IS spending to $159 million in the Rate Year. However, despite this reduction from the Company's request of $286 million, it still exceeds the IS capital spend in prior years by a significant amount. FY 2015 and 2016 had total IS capital spend of $85 million and $93 million, respectively. And although FY 2017 reports IS capital spending of $153 million, Staff has concerns about the data for that fiscal year, as previously discussed.

Q. What do you recommend to address this concern?

A. We propose an IS Capital Investment Reconciliation Mechanism to protect ratepayers from paying delivery rates that are too high because the Company was not able to implement its entire IS investment plan.

Q. Please briefly describe the proposed IS Capital Investment Reconciliation Mechanism.

A. We recommend that the actual Service Company Rent expense associated with IS capital investments be compared with forecast Service Company Rent expense approved by the Commission. If actual investment falls short of the approved budget, the difference would be owed to customers and should be deferred for later disposition, with carrying charges calculated using the pre-tax rate of return approved by the Commission in this proceeding. However, the mechanism should be a one-way, downward only true-up. Therefore, if actual Service Company Rent expense exceeds the approved Rate Year allowance, a regulatory liability would not be established for the Company to recover from customers at a later date. The calculations needed for this mechanism should be made and

filed with the Secretary on or before July 31st of the subsequent Rate Year.

Q. Why does the Panel recommend that the mechanism be a one-way, downward-only true-up mechanism?

A. Budgeting and spending are activities wholly within the Company's control. Improving its performance in these areas also is within the Company's control. A two-way true-up will not provide an incentive for the Company to improve its budgeting and spending processes. Customers, on the other hand, have no control over the Company's level and pace of spending yet they bear the risk that the Company's historic challenges in spending to projected levels will continue, and will be reflected in rates. The true-up mechanism, therefore, should reconcile only on a downward to allocate these risks equitably between the Company and ratepayers.

Future Process Improvements

Q. Do you have any recommendations for future process improvements related to IS?

A. Yes. We have recommendations to improve the Company's IS variance reporting and investment

monitoring. We also have recommendations regarding the information provided in the IS sanction papers and IRS documents going forward.

Q. Please explain your first recommendation regarding IS reporting and monitoring.

A. Throughout our testimony, we have outlined our concerns with the Company's inability to spend up to its IS budget in the past. We have also discussed our concerns about the Company's prior implementation of its large-scale IS project, the USFP. Due to these concerns, we recommend that the Company provide reports to Staff and the Commission on a regular basis.

Q. What IS capital expenditure and variance reporting requirements do you recommend?

A. To enable Staff and the Commission to monitor the Company's IS investment plans, the Company should be required to make regular filings, as follows: (1) prior to the start of each Rate Year; (2) quarterly during the Rate Year; and (3) after the end of the Rate Year.

Q. What information should the Company be required to file shortly after the Commission sets rates in this case, and prior to the start of

subsequent Rate Years?

A. Prior to the beginning of the Rate Year, the Company should file with the Secretary its IS prioritization summary to identify the proposed IS projects and their estimated costs. It also should file the approved five-year capital plan for IS investments.

Q. What information should be filed on a quarterly basis?

A. The Company should file quarterly project variance reports to Staff with explanations for any variances between the approved budget and actual expenditures.

Q. When should the quarterly reports be filed?

A. We recommend that the Commission require quarterly reports to be filed within 45 days after the end of each of the first three calendar quarters of each Rate Year. The annual report may be filed in place of a report on fourth quarter performance.

Q. What information should be filed annually, after the end of a rate year?

A. We recommend that the Commission require that the annual reports include the following

information: (1) a final variance summary of IS capital expenditures for all capital projects and programs including all on-going and active projects and programs; (2) a narrative explaining any cost or timeline deltas exceeding 10 percent; (3) a narrative on project design, contract or software as a service status, and/or build status, including a detailed build schedule for each project, for any ongoing projects; (4) a description of any new projects or programs; and (5) IS capital project sanctioning documents for any projects exceeding $1 million that were authorized during the previous Rate Year.

Q. When should the annual reports be filed?

A. We recommend that the annual reports be filed not later than 60 days after the end of the last quarter in each Rate Year.

Q. Should these reporting requirements continue beyond the Rate Year?

A. Yes. It is important for the Commission to monitor the Company’s capital investment plans on an ongoing basis. Informational reports filed at regular intervals are critical to

maintain oversight of the IS investment plan. These recommendations are consistent with existing reporting requirements for the Company's electric and gas businesses. They also are critical to establishing the foundation for Staff to conduct a comprehensive, project-specific examination of IS projects in future rate proceedings that is comparable to its current examination of electric and gas capital plans.

Q. Please explain your second recommendation regarding information provided in the IS IRS and sanction papers.

A. Based on our review of IS IRS and sanction papers, we have concerns with the Company's cost estimates, as well as with the minimum cost solutions and benefit cost analysis for solutions that exceed the minimum cost solutions. The minimum cost solution is considered to be the least costly option to address the issue.

Q. What are your concerns with the Company's cost estimates?

A. In technical meetings, the Company explained

that it typically develops costs for projects using estimated labor hours and contract labor rates. However, Staff was unable determine if the estimated hours used to develop the cost estimates are reasonable.

Q. Can you give an example of this issue?

A. Yes. In the Company's response to IR DPS-559, for which it claimed confidentiality and requested an exception from disclosure, the Company provided information on project INVP #3932, the Customer Contact Center and Service Delivery Center. This response estimated the costs of this project using estimated hours and contract rates, as described above. However, Staff was unable to determine if these costs were reasonable because the estimated labor hours were developed based on judgment, rather than empirical data. Additionally, approximately 40 percent of the estimated cost of the project is "Other." We could not find a description of or support for this cost element, and therefore could not determine if it was reasonable.

Q. Can you provide another example of this issue?

A. Our second example is drawn from the Company's response to DPS-607, for which the Company also claimed an exception from disclosure because it purportedly includes confidential information. DPS-607 asked the Company to provide all workpapers and calculations supporting the operating expenses for each of the Grid Modernization IS projects. In response, the Company provided a detailed analysis of the estimated operating expenses for each project. However, many of these estimates were based on hard-coded variables, such as the number of labor hours and hourly rates. While the hourly rates may be tied to contracts, it was not possible for us to determine if rates for specific types of work and the number of hours needed were estimated appropriately.

Q. What are your concerns regarding the Company's minimum cost solutions?

A. In our review, we found instances where a project did not specifically identify whether the selected project was the minimum cost solution. For example, the sanction paper INVP #4289, "Network Improvement," was included on

pages 131 to 143 of the Company's response to DPS-275. The sanction paper describes the project as needed to "migrate 4 of the existing legacy network sites onto the new Verizon service." Pages 7 and 8 of the sanction paper list the three alternatives that were considered but ultimately rejected: (1) do nothing; (2) delay implementation; and (3) partial implementation. Although these are viable options, the sanction paper does not indicate whether the project selected was the minimum cost solution, or whether other full implementation services were considered.

Q. Why is this important?

A. The sanctioning process should provide complete transparency to Staff, and decision makers at the Company, to determine that all possible options and alternatives were considered. We need to verify that the utility is making the most cost-effective decision on whether to approve project spending. Although the sanction papers define alternatives, additional information is needed to improve Staff's review process.

Q. What improvements do you recommend to the Service Company's IRS, sanction documents, and other supporting documentation?

A. We recommend that that the Company more fully support its cost estimates and work collaboratively with Staff to show that such estimates are reasonable. Additionally, the sanction paper or IRS document should state if the solution chosen was the minimum-cost alternative. If the Company chose a higher-cost, or enhanced, program, the sanction paper should present an analysis that compares the benefits and costs associated with the project life cycle. It should further explain how the results of the analysis support the decision to pursue the selected alternative.

Q. Does this conclude your testimony at this time?

A. Yes.