start with the Cost Code 1210 - Unit 1 and 2 ALSTOM Steam Generator SCR work.

A: In regard to Cost Code 1210 – Unit 1 SCR, my analysis of all of the related purchase orders and change orders is provided in Schedule DFM2010-17. To start, as the supporting documentation in the above referenced schedule makes clear, this work was awarded to ALSTOM under a fixed-price contract and the initial PO in the amount of **[redacted]** was issued on May 1, 2006. The initial PO amount for this line item only reflects the original contract amount, and does not contain any contingency for change orders. For purposes of this analysis, I refer to the above amount as the base contract amount. As I and others have explained, a fixed-price contract does not mean that there will not be any change orders. In fact, it is highly likely that there will be change orders. This truism is universally and well understood in the construction industry. ALSTOM's contract was an engineer, procure and construct ("EPC") contract that contains certain assumptions and stipulations. The contract itself is comprised of some 1,800 pages. ALSTOM's work on Iatan Unit 1 involved tying-into and literally building its own work on top of an existing, operating plant, and ALSTOM's work on Iatan Unit 2 was adjacent to and shared common facilities of all types with Iatan Unit 1. This is very difficult work and would be seen as such in the industry. Accordingly, it is not unreasonable to assume that there may be ambiguities within the text of that contract regarding ALSTOM's technical requirements or scope of work that would lead to later change orders.

As of June 30, 2010, KCP&L had incurred costs related to ALSTOM of **[redacted]** and its total committed cost at that time was **[redacted]** With respect to total committed cost amount, **[redacted]** or **[redacted]** comprises base contract work (see above referenced schedule), **[redacted]** or **[redacted]** comprises schedule related items, **[redacted]** or **[redacted]** represents design maturation and the

remaining ** ** of costs comprise pricing, scope changes and errors impacts.

With regard to cost variances when compared to the base contract amount of ** ** (see above referenced schedule), costs have increased by ** ** in total or about ** ** With respect to the additional schedule related costs of ** ** as I and others have testified, delays or extensions of time on a project such as Iatan are extremely costly. For months on end, the total Iatan head count hovered in the vicinity of 3,000 people and at $100/man-hour, the hourly cost can be approximated at $300,000 – that is equivalent to $3 million for one ten hour shift. **

** The amounts paid to ALSTOM are all the more reasonable when the basis for these payments is fully explained and considered. Company witnesses Mr. Roberts and Mr. Downey each testify that ALSTOM would have been entitled to compensation for increases in the Unit 1 Outage's complexity and duration resulting from the scopes of work that were actually needed and added, including the rehabilitation of the economizer. The latent conditions within the economizer that were discovered during the Unit 1 Outage further delayed ALSTOM's work because its new equipment had to tie-in to the existing economizer. Because there was cooperation between ALSTOM, KCP&L and the other contractors, ALSTOM resequenced its work during the Outage in order to mitigate the impacts of this unforeseen event. Had disagreements between KCP&L and ALSTOM regarding schedule delays been allowed to fester and fought-out in court while the Project's schedule incrementally slipped due to contract interpretation differences, KCP&L would

have ultimately had liability for much more than what was paid to ALSTOM. Here, as Company witness Mr. Downey discusses in his testimony, KCP&L chose to work cooperatively with ALSTOM on an agreement that was the least cost alternative, which conforms to similar action that its industry peers would have taken, faced with the same or similar choices.

With respect to the design maturation category, most of these additional costs were the result of completion of the design of various ALSTOM interfacing-systems that impacted ALSTOM's work and ALSTOM was thus compensated according to the terms of its contract.

Based upon my analysis, I believe that the additional amounts paid to ALSTOM on Iatan Unit 1 were prudent, reasonable, understandable and transparently supported by project documentation.

A: Could you summarize your analysis with respect to the Unit 2 ALSTOM Steam Generator work?

A: In regard to Cost Code 1210 – Unit 2, my analysis of all of the related purchase orders and change orders is provided in Schedule DFM2010-18. ALSTOM's work on Iatan Unit 2 was provided under the same fixed-price contract as Unit 1. ALSTOM's original contract amount for its Unit 2 work listed in the initial PO dated May 1, 2006 was **[redacted]** For the purposes of this analysis, I again refer to the above amount as the base contract amount.

As of June 30, 2010, KCP&L had incurred costs of **[redacted]** and its total committed cost at that time was **[redacted]** With respect to the total committed cost amount, **[redacted]** or **[redacted]** comprises base contract work (see above referenced schedule), **[redacted]** or **[redacted]** comprises schedule related items, **[redacted]** or **[redacted]** represents design maturation and the remaining costs

of ** [redacted] ** is comprised of pricing escalation and new scope for the most part along with some minimal amounts for errors of various nature ** [redacted] **.

With respect to the above schedule-related costs, my view with respect to those are similar to Cost Code 1210 – Unit 1, as set forth above. In that light, KCP&L has committed to pay ALSTOM appropriate sums related to schedule impacts ** [redacted] ** so as to ensure the most timely project completion as reasonable. ** [redacted] ** Company witness Mr. Downey testifies at length as to the benefits derived from the agreements that were struck with ALSTOM related to its schedule compliance, and I fully agree with Mr. Downey's testimony. Here, KCP&L chose the least cost alternative and it should not be punished for such reasonable choices.

My analysis shows that the increase in costs of the Unit 2 ALSTOM Steam Generator and AQCS scope of work was prudent, reasonable, understandable and transparently supported by the Iatan Project's documentation and would be seen as such in the industry. Those experienced in the business would have no difficulty in grasping the essence of the cost variances associated with Cost Code 1210 – Unit 2.

Q: Based upon your review of the purchase orders and change orders, can you please explain and summarize the reasons for the cost variances as compared to the Control Budget Estimate for the Kiewit work?

A: Yes but before I do, I would like to provide some additional background with respect to the Balance of Plant ("BOP") work: Kiewit was retained by KCP&L as the Iatan Project's general contractor. There has been considerable testimony surrounding Kiewit and its role on the Iatan Project but here, I want to make several general observations

related to the cost of the BOP work. First, the Kiewit BOP scope comprises virtually all of the construction work except for the steam generator, turbine, AQCS system, engineered equipment, certain footings and certain materials handling systems. In that light, the breadth of the scope is daunting and all-encompassing.

Second, while the contract value of the BOP work does not exceed that of ALSTOM, the BOP work was nevertheless more complex in many regards. In part, this is because many different types of equipment, systems and devices are distributed throughout the plant (some at great distances) and all must work in harmony and many of those systems have to coordinate with and tie-in the work of other EPC and specialty contractors on site – not just ALSTOM's boiler and AQCS but also the cooling tower, water treatment, the various tanks, ammonia storage, and others . Many different types of skill sets and craft labor were required as well as significant coordination and management by both Kiewit and KCP&L.

Third, in relative terms, the BOP work was perhaps the most challenging, risk laden and expensive work on the Iatan Project due to its scheduling aspects. Here, Kiewit not only had to schedule its own work but it also had to interface many times, in many ways, in many places with the project's other major contractors. Everybody in the business knows that the BOP work on these projects carry with it the most risk for delays, interferences, disruptions and impacts. This means that it is almost impossible to avoid cost increases due to schedule regardless of whether such disruptive events emanate from engineering or field construction conditions. Thus, the BOP work was much more diffused in almost every dimension when compared to that of ALSTOM, Toshiba, Kissick and the like.

Fourth, the design engineering was only about 25% complete at best when Kiewit developed its proposal and quite simply, as the design progressed, new issues, new work

and associated sequences came into play. KCP&L reasonably and correctly chose to freeze the Kiewit contract value relative to the estimate it provided when design was 25% complete so that there would not have been a moving target. From a cost perspective, this is significant because had KCP&L simply waited until the design was more mature, the Kiewit variances would not be as great as they appear to be now. Due to all of the above, a considerable portion of the project's contingency was inherently associated with BOP risk and cost overruns and such costs have to be judged in that light. At a minimum, portions of the project contingency have to be allocated against the BOP work in order to yield any meaningful and balanced analysis of actual costs, as discussed earlier in my testimony.

Q: Could you explain the particular cost variances in Cost Code X001 – Unit 1 BOP?

A: My analysis of the Change Orders and Purchase Orders for Cost Code X001-Unit 1 BOP is attached as Schedule DFM2010-19. As of June 30, 2010, KCP&L had incurred costs of **[redacted]** and the total committed value was **[redacted]** The cost growth as compared to Kiewit's base contract amount was **[redacted]** or **[redacted]** the reasons for which I have broadly discussed above and will further discuss below. With respect to total committed cost, base contract work comprised **[redacted]** or **[redacted]** design maturation comprised **[redacted]** or **[redacted]** while the remaining **[redacted]** comprises new scope, error impacts and schedule-related impacts for the most part.

One of the items that obviously contributed to the BOP expenses was the fact that as the design matured, new issues, new structures and sequences of work became defined and Kiewit had to accommodate them. For example, such post-award items included but are not limited to: CEMS support steel; gas cleaning transformer pads; PCM grade slabs; fly-ash system work, vacuum air system work; SCR DCS rooms and others.

Another contributing factor in the BOP cost increase is that, inherently, both the design and construction work were performed in an existing plant which is widely understood in the industry to be more much risky, expensive and cost-overrun prone than green-field construction. Those who have remodeled their own kitchens or bathrooms can underscore the reality of rising costs when rehabilitating in an existing structure all while trying to live in it. The literal danger of having to work in an existing, operating large power plant is so many times more costly than a home's kitchen. A few examples of cost increases related to the rehab work that Kiewit performed include but are not limited to: cable tray and duct bank obstructions; conflicts in cable trays and supports; deluge system foundation conflicts; fly-ash pipe racks; general fly-ash outage work; HC fixture issues at Bag-house 1; damaged SCR conduit and many others.

Finally, cost overruns due to quantity increases amounted to almost **[redacted]** This exposure was inherent by virtue of the contracting strategy employed with Kiewit. Mr. Downey addressed the reasonableness of that strategy in his Direct Testimony, and I agree with that testimony. *See* Downey Direct Testimony pp. 21-27. From a cost perspective, since the design was not yet complete when Kiewit was awarded its base contract work, certain assumptions and qualifications had to be made concerning work quantities and associated costs including that of permanent materials; the cost estimate was based on estimated quantities, pro-rated accessories, and unit prices. When either one changed, the total cost changed. As the design matured, not all of the assumptions held and under the terms of its contract, Kiewit was due compensation adjustments.

I believe that based upon the documentation I have reviewed, the increases to the BOP work for Unit 1 were prudent, reasonable, understandable and transparently supported by KCP&L's Iatan Project documentation.

Q: Could you explain the particular cost variances in Cost Code X001 – Unit 2 BOP?

A. My analysis of the Change Orders and Purchase Orders for Cost Code X001-Unit 2 BOP is attached as Schedule DFM2010-20. As of June 30, 2010, KCP&L had incurred costs of ** [redacted] ** and the total committed value was ** [redacted] ** The cost growth as compared to Kiewit's total contract amount was ** [redacted] ** or ** [redacted] ** the reasons for which I have broadly discussed above and will further discuss below. With respect to total committed cost, base contract work comprised ** [redacted] ** or ** [redacted] ** design maturation comprised ** [redacted] ** or ** [redacted] ** pricing changes comprised ** [redacted] ** or ** [redacted] ** new scope comprised ** [redacted] ** or ** [redacted] ** cost increases due to schedule comprised ** [redacted] ** or ** [redacted] ** and the remaining ** [redacted] ** comprised various errors.

As in the case of Iatan Unit 1 BOP costs, one of the items that obviously contributed to the BOP expenses for Iatan Unit 2 was the fact that as the design matured, new issues, new structures and sequences of work became defined and Kiewit had to build them. Examples of design maturation impacting the Unit 2 BOP cost include, but are not limited to: certain water treatment building foundations; crane girder column stiffener plates; multiple transformer pads; Steam Turbine Generator ("STG") hand rail issues; STG building beam seat requirements; masonry tie-ins; wall penetrations and secondary framing issues; condenser piping; Zero Liquid Discharge ("ZLD") building work; tank farm pipe supports; ZLD sound enclosures; coal car dumper footings; certain electro-hydraulic piping; weld types; steam blow piping; start-up support; chemical cleaning support and many others.

As I have testified, Kiewit's Iatan Unit 1 costs were heavily influenced by the overall existing-facility or rehab performance conditions which is evidenced in design maturation (additional work is identified as the design progresses) explaining ** [redacted] **

of the cost variance. Kiewit's Unit 2 work was less impacted by the existing facility. This is evidenced by the fact that design maturation comprises only about ** [redacted] ** of the cost variance. However, the fact that Unit 2 had to interface with the existing plant and work around Iatan Unit 1's operations nevertheless contributed to some of the cost increases.

Finally, cost variances due to an increase in quantities for the BOP work on Iatan Unit 2 amounted to almost ** [redacted] ** As I have already testified, this exposure was inherent by virtue of the nature of the Balance of Plant work and completion of the design. As a result, at the time of Kiewit's original contract, certain assumptions and qualification had to be made concerning work quantities and associated costs, which then needed to be adjusted as the work progressed.

Based upon my analysis of the Unit 2 Balance of Plant work, the increase in costs are prudent, reasonable, understandable and transparently supported by the Iatan Project's documentation.

Q: Can you please summarize the reasons for the Cost Code 8334 variances from the Control Budget Estimate related to the Ash Handling for Unit 1?

A: My analysis of all of the relevant purchase orders and change orders is provided in Schedule DFM2010-21. As the referenced schedule indicates, as the design matured and piping re-route work along with dry/submerged flight conveyor work became defined, KCP&L vetted, bid and awarded most of the work to the Foley Company. Foley's base contract work was awarded in May 2008 in amount of ** [redacted] ** With the passage of time as the design continued to mature, more Ash Handling work became better defined and Foley was awarded the main of such work although others such as Enerfab, Kissick, Babcock & Wilcox performed relatively minor amounts of work.

As of June 30, 2010, KCP&L's incurred cost for the Code 8334 Unit 1 work was

** [redacted] ** and the committed contract amount was ** [redacted] ** With respect to actual expenditures, ** [redacted] ** or ** [redacted] ** comprised base contract work; ** [redacted] ** or ** [redacted] ** comprised design maturation work while the remaining ** [redacted] ** included new scope ** [redacted] ** pricing (net credit of ** [redacted] **) and various errors ** [redacted] **

I believe that the additional Ash Handling costs over time are prudent, reasonable, understandable and transparently supported by project documentation. This is work that was necessary for completion of the Iatan Unit 1 project, and as a result, comprise prudent cost increases.

Q: Can you please summarize the reasons for the Cost Code 8221 variances from the Control Budget Estimate related to the Foundations and Substructure scope of work for Unit 2?

A: My analysis of all of the relevant purchase orders and change orders is provided in Schedule DFM2010-22. The foundations and substructure scopes of work are actually "Balance of Plant" contracts. The work under Kissick's contract was performed on a "unit price" basis. This means that Kissick provided KCP&L with a price for installed units that was applied to the various scope items given to Kissick. As the designs for foundations were completed, Kissick would perform the work and KCP&L would pay Kissick for this work based upon the unit prices provided in Kissick's contract. Kissick provided these prices as a part of a formal bid process, and although KCP&L did not receive any other bids, they appear to be reasonable.

The first PO for this work awarded to Kissick on January 10, 2007 in the amount of ** [redacted] ** which I refer to as base contract award for the purposes of this analysis. Since Kissick was an on-site contractor, it was able to maintain a competitive posture as time passed and more critical and non-critical work became available. As of

June 30, 2010, KCP&L had incurred Kissick costs of ** [redacted] ** and its total committed amount was ** [redacted] ** The cost of the Kissick work grew by ** [redacted] ** as measured against the base contract award.

Of the reasons for the growth in the Kissick work, my analysis reveals that most significant was, not surprisingly, design maturation. With respect to total committed costs, ** [redacted] ** or ** [redacted] ** comprises base contract work (see above referenced schedule), ** [redacted] ** or ** [redacted] ** comprises design maturation and the remaining 5% comprises schedule related impacts along with pricing and scope changes. In other words, of the total increase in costs for this work, ** [redacted] ** of the growth has been due to design maturation. Schedule related cost increases of ** [redacted] ** were just ** [redacted] ** of the overall cost increases for pricing and scope amounted to about ** [redacted] ** credit or ** [redacted] **

Design maturation of this contract was reasonable and prudent. Kissick was one of the first contractors on site, as Kissick was the entity responsible to get the Iatan Project *out of the ground.* Accordingly, the majority of the Iatan Project's design that was related to Kissick's ultimate work was simply not complete at the time of award – additional scope and associated cost increases were always going to be incurred with design progression and this would be well understood by experienced industry parties.

For example, as the referenced schedule reveals, many new foundation packages were designed and awarded long after the initial Kissick award in January 2007 and such packages included but were not limited to: coal yard grading; gypsum fly ash structure; coal reclaim A; crusher tower; conveyor and dust collection structures; coal line foundations; fly-ash pipe-rack; coal pile run-off swale; ISO lift station; drive tower foundation; grounding coal reclaim structure; and many other foundations and structures.

Also, as time passed and design progressed much of the Iatan Project's

underground duct banks and piping runs was designed and available for pricing and construction and these included but were not limited to: limestone UG electrical; coal yard duct banks; PCO 26 ISO pipelines; mechanical and ISO piping revisions; and others. Finally, as the design matured, certain work that had been originally unit priced under specific performance assumptions had the actual performance conditions changed which upset the original unit pricing metrics – the result was more cost growth, although that growth was expected by virtue of the inherent Kissick contracting strategy which in the industry would not be viewed as flawed but rather normal for an equivalent project.

With respect to the cost increases due to schedule, these amounts are reasonable and prudent because it was important for KCP&L to accelerate Kissick in certain areas in order to maintain the critical path of the schedule. Company witness Mr. Davis addresses these circumstances and the costs of R&O #139 in his Rebuttal Testimony. As I have already testified, daily costs frequently ranged up to $3 million, for which KCP&L would be responsible in the event of a delay, and the amounts paid Kissick to minimize schedule slippage were reasonable and appropriate and would be seen as such in the industry at large.

Based upon my review of the documentation, the increases in costs for the foundation and substructure work were prudent, reasonable, understandable and transparently supported by KCP&L's Iatan Project documentation.

Q: Can you please summarize the reasons for the Cost Code 8413 variances from the Control Budget Estimate related to "Electrical Construction 3 - Coal Handling and Water Treatment" scope of work for Unit 2?

A: My analysis of all of the related purchase orders and change orders is provided in Schedule DFM2010-23. As of June 30, 2010, KCP&L had incurred costs of **[redacted]** and the committed contract value was **[redacted]** The main

reason for the to-date variance of ** [redacted] ** (when compared to the adjusted Control Budget Estimate) is due to the fact that KCP&L had initially anticipated that Kiewit would perform the electrical work in the coal yard and therefore most of the budget was moved to Kiewit work accounts: the Control Budget Estimate for the remaining 8413 work was minimal at ** [redacted] ** However, a later cost and schedule mitigation strategy that KCP&L employed was to transfer the instant work scope to another contractor so as to allow Kiewit to better focus on areas in the Turbine Generator Building and boiler where it was experiencing productivity and schedule issues in early 2009. Thus, KCP&L re-bid this scope of work and Automatic Systems, Inc. ("ASI") was awarded the base contract. ASI already had an EPC contract for the material handling systems, and therefore was already mobilized at the site and capable of doing the work.

The 8413 work experienced a contract growth of ** [redacted] ** when compared to the base contract amount of ** [redacted] **) (*See* ASI purchase order in referenced schedule). With respect to the cost variance reasons when compared to the base contract amount, ** [redacted] ** or ** [redacted] ** of the growth or was due to design maturation. Remaining growth is attributed to design errors and schedule related issues. Support for the above is contained in the above referenced schedule.

The cost increases for this budget line-item are prudent, reasonable, understandable and transparently supported by project documentation.

Q: Let's discuss the cost variances to the Indirect costs. Are there any cost variances in the Indirect cost category that can be analyzed using the purchase order and change order methodology described above?

A: Yes. The Cost Code 0300 variances associated with Burns & McDonnell's Design Engineering services for Unit 2 can be analyzed this way. I have provided my analysis of all of the relevant purchase orders and change orders in Schedule DFM2010-24.

As I have already testified, for a plethora of reasons, the design and construction of every power plant is unique and associated design costs are not readily known, understood and fully quantified until the later stages of the project when most of the design issues have been identified, vetted and resolved. The above condition represents the essence of design maturation.

A review of the above-referenced schedule indicates that much of the cost growth was merely due to added design tasks, the existence of which could not have been readily foreseen and quantifiable in early 2007 when Burns & McDonnell's Unit 2 contract was formalized. Such tasks included but were not limited to: traffic studies; coal yard modification; various piping and welding studies; programming and many more.

As of June 30, 2010, KCP&L had incurred costs for Burns & McDonnell in the amount of **[redacted]** and the committed contract amount at that time was **[redacted]** The 0300 design work experienced a growth of **[redacted]** or about **[redacted]** when compared to the Burns & McDonnell base contract totals. With regard to total design expenditures, **[redacted]** or about **[redacted]** was base contract work and **[redacted]** or **[redacted]** was due to design maturation. The balance of the costs of **[redacted]** were due to pricing, scope, error and schedule impacts. Therefore, of the total cost variance in this contract, **[redacted]** has been due to design maturation while **[redacted]** has been due to new scope. The other **[redacted]** of growth has been due to pricing, fabrication errors and schedule impacts.

Based upon my analysis, I believe that the increase in Burns & McDonnell's costs in this category are prudent, reasonable, understandable and transparently supported by KCP&L's Iatan Project documentation.

COST REFORECASTS AND ANALYSIS OF COST VARIANCES FOR INDIRECT COSTS

Q: You had mentioned earlier that Staff could have used the documents that KCP&L assembled during the reforecast effort in order to understand KCP&L's explanation of all of the cost variances from the Control Budget Estimate, but in particular the Indirect costs. First, can you please explain how developing a cost projection for an Estimate at Completion ("EAC") is an effective management tool?

A: In my Direct Testimony, I testified that reforecasting costs on a complex construction project such as Iatan Unit 1 and Iatan Unit 2 is reflective of prudent management. In general, prospective reforecasts of a project's costs allow for the project's managers and senior management to make prudent and reasonable decisions as work progresses, and that was certainly the case on the Iatan Project. KCP&L used the cost reforecasts it performed not only to unearth and examine all potential cost variances in regard to the Control Budget Estimate for both direct and indirect costs but also to more directly target management's focus and minimize the associated costs.

As an example, the timing of the May 2008 Reforecast was such that it provided KCP&L with a prospective analysis of the Iatan Project's costs that both identified the likely cost variances and described the causes of those variances at a critical time for both of the Iatan Projects. As indicated above, the advantage of doing such an analysis on a prospective basis is that it gave KCP&L an opportunity to identify risks ahead of time so that to the extent possible, those risks could be mitigated.

Q: In simple terms, how could a review of the cost projection documents impart an understanding as to how and why the Iatan Project's costs increased?

A: In a nutshell, each of the Iatan Project's cost reforecasts entailed very intense and structured efforts to take advantage of the knowledge base of KCP&L's management

staff, its engineering staff including Burns & McDonnell along with its construction contractors to identify and vet issues that might have a potential cost or schedule impact. KCP&L's reforecast efforts lasted for many, many weeks (sometimes months) so as to allow time such as necessary to do a complete and thorough analysis of remaining costs and associated reasons. The end-of-day result of the process was the establishment of a series of cost estimates attached to various R&Os and CPs that were in turn related to line items of work in the Cost Portfolio. These cost estimates could then be considered along with to-date costs so as to establish total costs at completion. As time passed, the cost estimates for particular issues were replaced by actual costs through the form of purchase orders and change orders. In that light, the purchase orders and change orders were tantamount to only a true-up of amounts explained and vetted in the R&Os and CPs. This is why I believe that the cost forecasts provide great insight to cost overrun reasons and amounts.

Q: You testified earlier that in order to fully understand KCP&L's explanation of and justification for increased Indirect costs, it is necessary to review the documentation for the various reforecasts. In addition to the reasons that you just expressed, in general, why are these cost projections relevant to understanding increased Indirect costs on the Iatan Project?

A: With respect to Iatan Project's Indirect costs, some of these cost categories are not based upon a single contract or a defined scope of work. KCP&L incurred these costs in part for its personnel and consultants to manage and oversee the design, construction and start-up activities of the Iatan Project's contractors. Indirect costs also include such varied categories as fuel and consumable liquids for start-up, income generated from Iatan Unit 2's test power and the maintenance of the project site. Such costs are variable, and in the case of personnel for construction management or oversight functions, these

costs are incurred on a level-of-effort basis. Cost categories such as these are best understood from trending information that is harvested and evaluated during the reforecast efforts as opposed to merely looking at the face value of purchase orders or change orders or of actual costs expended.

Q: How did the May 2008 Reforecast provide an explanation of likely cost variances from the Iatan Project's Control Budget Estimates?

A: Once KCP&L approved the Control Budget Estimate for each of the Iatan Projects in December 2006, the project team established a process for documenting the potential risks and budget increases that resulted from the continued maturation of the Iatan Project's design. That process entailed the project team members identifying various "Risks and Opportunities" for Units 1 and 2, or "R&Os" based on knowledge and events that could, or in some cases had already impacted the Control Budget Estimate. Each R&O item contained an analysis and explanation of risk areas that could potentially result in a negative budget variance. The project team would also look for areas of opportunities that might result in a positive budget variance. These R&Os were developed by KCP&L's lead engineers and other project team members and tracked by the Project Controls Group. The Project Controls Group provided its first report on these items on July 11, 2007. A copy of this report is attached to my Direct Testimony as Schedule DFM2010-6. These early R&Os provided a basis, background, justification and understanding for specific budget variances.

Q: Can you give an example?

A: Absolutely. Schedule DFM2010-6 provides a detailed description of each R&O item for both Unit 1 and Unit 2 that had been identified as of that date. Item No. 1 identified on page 9 indicates that the "original CEP scope for Iatan 1 did not include any changes to the boiler components. However the (ALSTOM) design for the new SCR requires the

SCR inlet gas temperature to be limited to a maximum of 745 degrees F." This in turn required that the exit gas temperature for Unit 1 could not exceed 745 degrees. KCP&L analyzed that requirement for several months after the August 2006 execution of the ALSTOM Contract and determined that the best solution to meet this requirement was to add surface area, or additional economizer tubes, to the existing Economizer so as to cool it down to the required temperature.

Q: Why was this cost not captured in the Control Budget Estimate for Iatan Unit 1?

A: Because at the time the Control Budget Estimate for Iatan Unit 1 was completed, the design work had not matured to the point that the above requirement was known, developed, checked and otherwise fully understood.

Q: Previously, you testified regarding your coding of change orders by various reasons, including "design maturation." Is the above an example of a cost variance due to design maturation?

A: Yes. This is a very practical, straightforward and simple example of the essence of design maturation. Moreover, as Company witness Brent Davis testifies, the addition of the Economizer work and other large scopes of work to the Iatan Unit 1 Outage not only added to the physical amount of work that was performed but as a consequence adversely impacted the schedule because the Unit 1 Outage duration had to be increased to accommodate this unforeseen work. The schedule-related costs are separate from the direct cost of the Economizer work.

Q: Was this non-discretionary work that KCP&L had to perform on Iatan Unit 1?

A: Yes, this change was required in order to interface and optimize the operation of the existing economizer with the new environmental controls added to the Unit.

Q: What did the Economizer work ultimately cost?

A: The K Report for Iatan Unit 1 reflects that adding this scope of work resulted in a budget

variance of ** [redacted] ** for the purchase of the equipment and ** [redacted] ** for the installation of the equipment. These two items together total ** [redacted] ** (See cost codes X014 and 8335 of Schedule DFM2010-9 Unit 1). Contingency in the amount of ** [redacted] ** was applied (Schedule DFM2010-13 Unit 1) to the equipment purchase, leaving a net budget variance of ** [redacted] ** for the furnishing and erecting of the work.

Q: Was the above explanation provided to Staff?

A: Yes, it was provided to Staff on multiple occasions and in different formats. Staff was given a copy of the July 11, 2007 Risk and Opportunity Analysis as part of KCP&L's response to Data Request 402 on June 18, 2009. It was also attached to my Direct Testimony filed on June 1, 2010 as Schedule DFM2010-6. Additionally, R&O Item No. 1 was included in the documents for the May 2008 Reforecast that were made available to Staff as early as June of 2008. A copy of R&O Item No. 1 is attached as Schedule DFM2010-25.

Q: What was the Iatan Project's status at the time that the May 2008 Reforecast was completed?

A: As of May 2008, the project team reported that with respect to Unit 1, engineering was approximately 85% complete, procurement was approximately 84% complete and construction was approximately 48% complete. The actual cost expended by KCP&L at that time for Unit 1 was $218 million. For Unit 2, engineering was 70% complete, procurement 96% complete, and construction was approximately 20% complete. The actual cost expended by KCP&L for Unit 2 was approximately $728 million.

Q: Why is the amount of the actual costs expended at the time of the May 2008 Reforecast relevant?

A: Because KCP&L's project team had transparently informed its Executive Oversight

Committee, its Board of Directors and the Staff that despite the status of actual expenses to date, it had nevertheless concluded that the Iatan Project's end cost was likely to increase. When the May 2008 Reforecast was completed, Iatan Unit 1 had actually spent about 58% of its Control Budget Estimate, and Iatan Unit 2 had expended about 43% of its budget. This underscores the necessity and reasonableness of reforecasting a project's EAC as the project progresses.

Q: Why was it necessary and reasonable to reforecast the Iatan Project's EAC?

A: Without such diagnostics, KCP&L's senior management could have acted imprudently. Had KCP&L's project management team not paid attention to the R&Os and other indicators of rising costs and proactively managed them but rather had merely waited until the Project literally ran out of budget, senior management could very likely have made hasty and uninformed decisions due to lack of focus and incomplete information thus adversely impacted the Iatan Project's final costs. Lastly, because of the transparent process that the project team used in developing not only its cost modeling but the justification for the increases to the Control Budget Estimate, KCP&L's senior management had in its arsenal the requisite mile-post information to hold its project team accountable to the various projections as the actual events unfolded.

Q: Was an explanation of the analysis performed by KCP&L with respect to the budget variances unearthed by the May 2008 Reforecast provided to Staff?

A: Yes. As an example of the explanations that were provided to Staff, I have attached as Schedule DFM2010-26 the R&O summary sheet for R&O Item No. 364, which is the project team's analysis material quantity trends in the Balance of Plant work. This R&O has as narrative of the issue and multiple pages of analysis by both Kiewit and KCP&L regarding the trends that were identified at that time. This and the other R&O's on which I have or will comment (*see* Schedules DFM2010-10, DFM2010-25 and DFM2010-27)

provide a good sampling of the overall nature of the information KCP&L provided. These R&O's show the level of the back-up documentation that was provided to Staff to provide context, analysis and supporting calculations for each of these items. It is my understanding that Staff received the entire Reforecast "book" which consists of approximately two banker's boxes of material to explain the projected cost increases for each Unit. These documents are well organized and clearly identified so that anyone with a question on a particular R&O could readily find all of the necessary backup at will.

Q: Has KCP&L's process for reforecasting the Iatan Unit 2 Project's EAC change since the May 2008 Reforecast?

A: Somewhat, but not substantively. Company witness Forrest Archibald describes in his Rebuttal Testimony how the Project Controls team decided to aggregate the various cost items that had been identified into "Cost Projection Folders" or "CPs." The CPs had the same type, quantity and quality of information as the R&Os although for easier analysis, the Project Controls team aggregated R&Os of similar nature. As an example, there were 16 separate R&Os related to ALSTOM that the project team created, reviewed and vetted in the May 2008 Reforecast, while for the future reforecast efforts, there is only one ALSTOM CP folder – the quality and level of information was not diminished. The above comprised a process improvement commonly seen within the industry that streamlines the cost reforecast effort without sacrificing the level of information created and should make a forensic, after-the-fact cost audit much easier.

Q: Returning to the analysis of the Indirect costs, how can the reforecast documents be used to explain those cost variances?

A: The line items for indirect costs I identified as having a cost variance (other than Burns & McDonnell which I have explained above) are as follows:

INDIRECT COSTS—Unit 1		VARIANCE
5043	Construction Staff, Project Mgt & KCP&L Depts	$ (3,942,195)
5074B	KCP&L - Audit Services (Schiff-Hardin + Ernst & Young)*	$ (1,976,326)
X000	Support / Services	$ (4,982,162)

and

INDIRECT COSTS—Unit 2		VARIANCE
0181	Audit / Oversight / Legal*	$ (9,306,535)
9400	Startup / Testing Labor & Consumables	$ (9,733,291)
0475	Startup Engineering	$ (5,603,577)
8150	CM - Construction Services	$ (8,552,467)
X000	Support / Services	$ (10,431,863)

For both units, the major increases in Indirect costs can be summarized as follows:

- Internal KCP&L construction staff and project management personnel: $3.9 million
- Audit/Oversight/Legal: $11.2 million
- Start-Up Support and Engineering: $15.3 million
- CM & Support Services: $23.9 million

Q: Please explain each of these categories.

A: Internal Construction Staff consists of the KCP&L construction management team as augmented by contract employees from temporary placement services such as Aerotek and NextSource.

Audit/Oversight and Legal are the services provided primarily by Schiff Hardin and KCP&L's auditors, Ernst & Young along with its own internal audit department charges.

Start-up Support and Engineering is, as the definition suggests, the combination of personnel, equipment, materials and vendors needed for start-up.

The Indirect category entitled "Field & Office Expenses and Miscellaneous includes multiple line items. "Support Services" is the category that experienced the greatest variance from the Control Budget Estimate, in large part because these costs fall into two primary categories: 1) for which there was no original Control Budget Estimate amount established that did not fit into any other established cost category; or 2) special issues that arose during the course of the project that needed to be tracked separately. The expenses that tended to be incurred under this category were unanticipated one time costs such as the costs associated with KCP&L's management of the Crane Incident and additional indirect costs for consulting or legal services related to the T-23 boiler material metallurgical testing.

Q: How do the documents supporting KCP&L's cost reforecasts explain the cost variances for each of the categories described above?

A: In the May 2008 Reforecast, the most significant single item of cost in the Indirect Cost category in 2008 was project staffing. As Company witness Brent Davis testifies, the May 2008 Reforecast concluded a process that had been started the prior year by Company witness Brent Davis and Mr. David Price, the Vice President of Construction. The May 2008 EAC effort included another review of the Iatan staffing plans to accommodate the change in Balance of Plant contracting strategy. By the time of the initial R&O presentation to the EOC on July 11, 2007, the project team had concluded that an increase in staffing levels would indeed be necessary. R&O Item No. 009, which was initiated in April 2007, states that an increase to the Iatan Project's Construction Management team was needed to "adequately monitor the overall design, quality, efficiency and safety aspects of the project along with the progress and coordination of the work." In addition, this R&O details other staffing needs that had been identified with a projected cost of $35,619,853. By the time of the May 2008 Reforecast, KCP&L

had already begun its ramp-up of personnel as described in R&O Item No. 009. The cost reforecast effort updated that projection, which resulted in an increase of that portion of the Control Budget Estimate. The above comprises a reasonable, real-world explanation and justification for the cost variance related to KCP&L's internal construction and project management staff.

The May 2008 Reforecast also projected a significant increase to the cost of oversight/legal and audit services for the Project. R&O 237 projected a budget variance of $8.2 million for this line item for both Unit 1 and Unit 2. The May 2008 Reforecast captured the then-current trend in the costs associated with oversight and legal costs. KCP&L's Senior Management committed to maintaining the same level of oversight that had been effective as of that time. A copy of R&O No. 237 is attached as Schedule DFM2010-27.

Increased Start-up Support and Engineering, as Company witness Mr. Davis testifies, emanated from Mr. Price's decision to hire an experienced start-up manager early in the Iatan Project, who upon arrival began developing a more elaborate, complete and mature plan for the start-up and commissioning of both units. That plan also included significant participation of existing KCP&L Operations personnel, whose role was increased at that time. In contrast, at the time of the preparation of the Control Budget Estimate, the plan for start-up support associated with the BOP contracting model had not been developed, and the new manager along with the hiring of Kiewit as the BOP contractor brought further impetus and clarity to that issue. Also, costs in this category include a number of commodities such as oil and lubricants that are subject to considerable price vulnerability. The largest change in the start-up plan that was realized at that time was found by the project team when it compared the original basis for estimate for start-up support embedded in the Control Budget Estimate with Kiewit's

estimate. The associated R&O's for this category are R&O Nos. 248, 251 and 353.

As of the May 2008 Reforecast, the "Support Services" amount was $9,038,755 and included R&O's #356 for repairs to the bridges leading to the Iatan site which was projected to be $4.1M, and R&O 0357 which had a projected $2.5M for additional bonding costs.

Q: Are the costs in the "Support Services" line item evidence of imprudent management because they were not anticipated at the outset of the Iatan Project?

A: No. While these and the other costs that ultimately landed in this cost category were unanticipated, these costs were necessary. On a large, multiyear construction project such as the Iatan Project, it is expected that there will be a decent share of one-time events or unanticipated costs that require added funding. In my opinion, the items that were aggregated under this category constitute project costs were legitimate project costs and not the result imprudent management. Moreover, the documentation exists for any interested party to make their own determination.

Q: Do you have an opinion regarding whether it was prudent for KCP&L to increase its budgeted Indirect costs to this extent in manner prescribed by the May 2008 Reforecast?

A: Yes. The increases to Indirect costs at that time were developed through a thorough process that deemed them to be reasonable, were thoroughly vetted and were found to be necessary by the project's senior leadership. The May 2008 Reforecast allowed KCP&L's senior management to hold the project team accountable for its findings, and the documentation is clear and straightforward. These increases had nothing to do with imprudent management. Further, in light of the clear, straightforward and transparent contemporaneous documentation provided by KCP&L with respect to the various Indirects cost line items, the industry in general would not be critical of such cost

variances, given the nature of the Iatan Project.

Q: When was the next reforecast of the Iatan Project's EAC?

A: The next reforecast was the 2009 Cost Reforecast that was completed in July 2009 and presented to Staff on August 5, 2009. Company witness Mr. Archibald testifies regarding the circumstances that prompted this reforecast. This reforecast also documents changes in KCP&L's projections for its indirect costs.

Q: Please describe the meeting with Staff on August 5, 2009 when the results of the 2009 Cost Reforecast were shared with Staff.

A: KCP&L's project team presented Staff with a power point presentation that summarized the results of the 2009 Reforeceast. *See* Schedule FA2010-5. The meeting was led by Mr. Churchman, Mr. Foster and Mr. Archibald, who provided commentary to the slides. The following slide comprises a summary of the reconciliation that KCP&L provided:

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[redacted]

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Q: Do you recall Staff raising any issues or objections to the presentation at this August 5, 2009 meeting?

A: No, I do not.

Q: With respect to variances of particular line items, what does this chart show?

A: This chart shows that contingency from the Control Budget Estimate as updated in the May 2008 Reforecast was allocated to certain line items, including the Balance of Plant, Indirects and other accounts.

Q: So even though the Project's overall estimated cost did not go up, there were select line items that increased in cost within the Cost Portfolio?

A: Yes, there were items that increased and decreased which is invariably the case with most

cost projections. It is widely accepted and understood within the industry that the purpose of contingency is to cover any net increases.

Q: If someone were to drill-down on why there was an additional allocation of $15.6 million to Indirects, how could that be done?

A: The starting point would be to review the following CPs within which there is the justification:

- CP03 - B&McD Engineering
- CP04 (a- j) – Construction Management Staffing
- CP18 and 19 – Indirects

Q: What did the 2009 Cost Reforecast conclude specifically with respect to the Iatan Unit 2 Projects' Indirect Costs?

A: The aggregated cost projection for Indirects in regard to project support increased by $15.6 million and there was as net negative variance for Test Run Revenue/Start-up fuel cost due to the change in the scheduled project completion along with KCP&L recognizing certain projected market effects on test power sales. However, sufficient contingency remained in the budget at that time to cover this increase, so there was no net budget change.

Q: As part of the 2009 Cost Reforecast analysis, did KCP&L change the way it obtained its coal train cars for Iatan Unit 2?

A: Yes. KCP&L modeled the cost differential between leasing and buying the rail cars and determined that leasing was a better option. This resulted in a cost savings to the Project of $39.2 million. The basis for this change is documented in CP-22.

Q: Staff, in its Report, states that KCP&L "significantly reduced the scope" of Iatan Unit 2 and as a result, KCP&L actually had a much larger overrun than it claims.

See **Staff's Report at pp. 5-6. Does Staff have a reasonable point?**

A: Not at all. It is universally understood in the industry that the goal is to manage costs down and/or totally away, as much as reasonable. In evaluating overall performance, which is what Staff should be in the business of doing, it makes no sense for Staff to just look at line items of cost increases and ignore the line items of decreases – each and every budget line item counts and the bottom line is the important take-away. Staff's attempt to use one scope item against KCP&L where KCP&L nevertheless made a good decision that will result in a savings to KCP&L's customers in this rate case shows Staff's fundamental misunderstanding of how large projects are managed, budgeted, scheduled, tracked, controlled and maintained. Many of KCP&L's actions were similar to value engineering work that is commonly done during construction projects, wherein the project team finds better and less expensive ways to accomplish the same end result. Within the industry in general, evidence of such changes and their effects on end-cost would hardly be the target of criticism. Rather, they would be seen as evidence of reasonable management, engineering and construction.

Q: What happened to the cost savings that was realized from the decision to lease the train cars?

A: The amount was reallocated and subsumed into general contingency for use in other purposes, which is entirely appropriate and would be seen as such in the industry at large. In any event, the Iatan Unit 2 Project's overall contingency was adjusted based on the then-current assessment of the Project's remaining risks.

Q: When did KCP&L perform its next reforecast of Iatan Unit 2's budget?

A: As I stated in my Direct Testimony, KCP&L's project team presented a reforecast of the project's EAC to the EOC on March 26, 2010 which was subsequently provided to the KCP&L Board of Directors for approval on April 6, 2010 (the "April 2010 Cost

Reforecast").

Q: What comprised the primary changes in the April 2010 Cost Reforecast?

A: The April 2010 Cost Reforecast captured myriad changes when compared to the 2009 Cost Reforecast, and the most significant ones were: (1) increases to the project's start-up budget; (2) decreases to revenue projections from test power sales during the changed start-up and commissioning period; (3) increases to certain fixed and semi-fixed costs that were more clearly defined; and (4) increases in time-function expenses. Specifically with respect to the indirect expenses, the overall projected costs increased by $88 million primarily due to the increased start-up budget and the projected increase in duration of the project schedule. A chart summarizing the above increases as presented by KCP&L to Staff on April 15, 2010 as follows:

** [redacted] **

Q: Why did the start-up budget increase when compared to the 2009 Cost Reforecast?

A: At the time the 2009 Cost Reforecast was prepared, the project team had developed only a conceptual estimate for start-up and commissioning. As the Iatan Unit 2 Project's start-up and commissioning plans developed, advanced and otherwise matured, the team's knowledge increased and associated costs began to acquire more definition. In addition, this reforecast identified certain time-function costs associated with the start-up team that would increase due to the extended schedule.

Q: Has KCP&L revised its estimated cost to complete the Iatan Unit 2 Project since the April 2010 reforecast?

A: Yes. Since the time of the April 2010 Reforecast, many of the risks identified in the 2010

reforecast were successfully mitigated by KCP&L. As a result, KCP&L currently has an estimate at completion that is approximately $40 million less than projected in the April 2010 reforecast. Of this amount, $20.4 million constitutes a reduction in the projected Indirect costs. Company witness Mr. Robert Bell testifies to how effective the start-up team was in mitigating and avoiding the risks that were identified in concert with the April 2010 Reforecast and how the Iatan Unit 2 Project was able to substantially improve upon that estimate.

FAST-TRACK CONTRACTING METHOD

Q: Are you familiar with the term "fast-track" and how it is commonly used in the construction industry?

A: Yes, I have been working around and within fast track conditions for almost 50 years. In a nutshell, "fast-track" means shortening the overall project schedule by performing certain design and construction phases simultaneously. As an example, in a typical fast-track project, foundation and steel packages are designed, procured and installed while the building's follow-on aspects such as mechanical or electrical design are still in an embryonic design stage. Thus, this approach allows early work to be constructed even though the total design has not yet been completed. As a matter of reference, almost every office building, industrial building and power plant project that I have worked on in the last several decades has employed some manner of fast-track construction.

Yet, certain less experienced parties persistently misuse the term because laymen often mix-up "fast-track" with "schedule acceleration." Within the industry, schedule acceleration is a term most frequently used to describe the adverse impact of working overtime or out of sequence as a result of prior poor performance by other contractors, the issuance of late change orders, or other issues. As such, schedule acceleration of a contractor entails work that is handicapped in some way or executed under less than ideal

conditions and is frequently carried out at extra cost while fast-track work is most frequently completed with no cost premiums under unstressed conditions.

Q: Why was the Iatan Project a fast-track project?

A: Company witness Chris Giles testifies that as of the time the S&A was approved, KCP&L chose to mitigate the effects of the overheated construction market with an initially aggressive, fast-track schedule, and that Burns & McDonnell provided a schedule for design and construction on a fast-track basis that was doable. The Iatan Project's facts reveal that the effort to fast-track engineering was very successful.

Q: Staff's Report states that "Staff believes that a major factor that let to KCP&L incurring $200 million in cost overruns is KCP&L's management decision to fast track the project schedule by running the design and construction phases simultaneously." Do you agree with this statement?

A: No. First of all, as the entire construction industry knows and even Staff admits, project fast-tracking is not an unusual delivery method; it is one that has been time-tested and proven. Second, Staff fails to distinguish between avoidable and unavoidable cost increases caused by fast-tracking to the extent that such costs exist. As I have previously stated, many of the cost increases to both the Iatan Unit 1 and Iatan Unit 2 project were due to the fact that the design was not complete at the time the Control Budget Estimate was adopted and this condition is not a direct consequence of the fast-track nature of the Project. As I stated, fast-track relates to the design status at the time of field construction. In any event, if KCP&L would have waited until the design was fully completed before it set its budget for the Project, the additional quantities of work would have translated into both a more accurate but also much higher cost estimate. Costs associated with completed and more extensive design quantities are not avoidable "cost overruns" but represent costs for work that always had to be performed in order for the project to

function and otherwise be complete. At Iatan, such increases are certainly not the result of any imprudence by KCP&L's management.

Nevertheless, there are hypothetical circumstances in which fast-tracking could cause avoidable costs that would not otherwise have been incurred if the project had not been fast tracked. Such costs might be evidenced by an increased number of design errors. However, on the Iatan Project, all of the additional costs caused by design errors are less than 1%, a very good result when compared to industry norms. The design efficacy is further supported by the relatively uncomplicated and expedited start-up of Unit 2.

Finally, as Company witness Mr. Giles stated, KCP&L's decision to fast-track elements of the work cannot be viewed in a vacuum as Staff is inclined to do. The fact that KCP&L was able to procure all of the engineered materials from high quality vendors at an aggregate cost on Unit 1 that was $6 million less than the Control Budget's Procurement amount and on Iatan Unit 2 at an amount nearly $10 million less than the Control Budget Estimate underscores the prudency of KCP&L's management. Staff's position on fast-track is not reasonable.

Q: Does that conclude your testimony?

A: Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Kansas City Power & Light Company to Modify Its Tariffs to Continue the Implementation of Its Regulatory Plan	)))	Docket No. ER-2010-0355

AFFIDAVIT OF DANIEL F. MEYER

STATE OF ILLINOIS)
) ss
COUNTY OF COOK)

Daniel F. Meyer, being first duly sworn on his oath, states:

1. My name is Daniel F. Meyer. I am employed by Meyer Construction Consulting, Inc. My services have been retained by Schiff Hardin LLP, who is a consultant for Kansas City Power & Light Company.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Kansas City Power & Light Company consisting of Sixty - four (64) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Daniel F. Meyer

Subscribed and sworn before me this 3 day of December, 2010.

OFFICIAL SEAL
ANN M. WOLYN
Notary Public - State of Illinois
My Commission Expires Apr 29, 2014

Notary Public

My commission expires: 4-29-2014