

1 equipment. Once these technical specifications have been drafted, work beyond that point
2 ventures into facility basic engineering and detailed engineering. Pegasus-Global found
3 that KCP&L employed its current "in house" engineer, B&McD, for the development of
4 the initial PDR. This is a standard practice within the industry because using an engineer
5 which is already familiar with an Owner's practices, preferences and procedures save
6 both time and money during the preparation of that initial PDR. Pegasus-Global found
7 the use of the GSA both reasonable and prudent.

8 Q:

** [Redacted]

** [Drabinski at page 45, lines
15 - 21, and page 46, line 15 to page 47, line 13]

13 A:

** [Redacted]

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[REDACTED]
[REDACTED]
[REDACTED]**

Q: Did KCP&L retain the Owner Engineer in a timely fashion?

A: Yes. There is a difference between the formal process of negotiating and executing a contract on a project scope of work and the award and initiation of that scope of work by the engineer or contractor. On a mega-project a formal contract agreement will take much longer to negotiate and execute, and take a short period of time than it will take to initiate project work. Simply because the contract is not finalized does not mean that no work is done to advance that scope of work. It is routine for the two parties to initiate work under a detailed LNTP or a GSA that is necessary in order to advance work while the difficult process of negotiating a contract is pursued.

A contract document is a method by which risk is allocated among the two parties, and no experienced contractor or engineer would rush to execute a contract that it had not at a detailed level examined for every risk allocated to it, if for no other reason than to be sure that the contract price and schedule reflect that risk allocation. As of early 2006 there were still elements of the Iatan Unit 2 PDR that had not been fully settled, including the delivery method and contracting approach to be utilized for the BOP scope of work. That ultimate decision had a direct bearing on the scope of work to be contained within the B&McD contract, and thus the risk which would be allocated to and assumed by B&McD.

What was defined was primarily the procurement scope of engineering work and responsibility for that scope was retained by KCP&L. Therefore there was a scope of

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1 engineering work available immediately for B&McD in support of that procurement
2 effort and that scope of work could be adequately covered under the GSA already in
3 place between KCP&L and B&McD. Continuing work under the GSA enabled KCP&L
4 to initiate full activity on procurement of longer lead, engineered equipment supported by
5 B&McD's, engineering forces, all while completing the project definition and risk
6 allocation structure as the Iatan Unit 2 specific engineering agreement was negotiated and
7 executed.

8 Pegasus-Global found that KCP&L's actions to continue to "retain" B&McD's
9 engineering services under the GSA enabled KCP&L to move forward with critical
10 procurement of long lead equipment both reasonable and prudent for a mega-project.
11 Given that there was no delay in the initiation or delivery of B&McD's engineering
12 services, there was merely a period when those services were controlled under the GSA
13 until the project specific engineering agreement could be finalized and executed.

14 **Q: What did Pegasus-Global conclude with respect to KCP&L's management of Burns
15 & McDonnell?**

16 **A:** On any project, and especially on a mega-project, no contractor is in isolation. As
17 presented earlier in this testimony, mega-projects introduce a significant amount of stress
18 among and between engineers, contractors, and suppliers, all of which the owner or its
19 agent must manage. Pegasus-Global found that KCP&L was able to resolve all of those
20 issues and stresses in a timely and efficient manner. Did B&McD perform flawlessly?
21 No. But perfection is not the standard for prudent decisions or their execution. KCP&L
22 management had to resolve the issues and stresses which arise throughout the entire
23 execution of a mega-project.

1 Q: ** [REDACTED]
2 [REDACTED]
3 [REDACTED] ** [Drabinski at
4 page 85, lines 7 through page 99, line 19]
5 A: ** [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
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21 [REDACTED]

³⁹ Iatan Construction Project B&McD Vendor Audit Report – FINAL

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⁴⁰ BM Vendor Audit Follow-up 4-08

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Q:

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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
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[REDACTED]
[REDACTED]
[REDACTED]**

Q:

** [REDACTED]
[REDACTED]**

A:

** [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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1 [REDACTED]
2 [REDACTED]
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5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]**

11 Q: ** [REDACTED]
12 [REDACTED]**

13 A: ** [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]**

19 Q: **Did Pegasus-Global evaluate Iatan Unit 2 engineering status throughout the project**
20 **period, relative to Procurement and Construction?**

21 A: Yes. Relative to procurement of the major equipment, including the Unit 2 Boiler, the
22 Steam Turbine, other engineered long lead items and the major civil works contract for
23 the foundation, and ultimately, contracting for the BOP construction. These contracts

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1 were dependent on the engineering being adequately progressed to support the project.
2 Pegasus-Global discussed KCP&L's contracting approach elsewhere in this testimony.
3 Pegasus-Global concludes engineering progressed adequately to support all of these key
4 project activities. As Steve Jones, KCP&L's Procurement Manager testified, by the end
5 of 2006 B&McD had provided technical specifications and bid evaluations for the
6 completion of 24 contracts with a combined value of almost \$1billion and that did not
7 have any delay impact on the Iatan Project [Direct Testimony of Steve Jones, Kansas
8 Corporate Commission, Docket No. 10-KCPE-415-RTS, page 17, lines 1 – 11, December
9 17, 2009].

10 **Q: How does the status of the Engineering impact on specific Contracts?**

11 **A:** As noted earlier in this testimony, all mega-projects including the Iatan Project are
12 executed on a fast-track sequence basis, the purpose of which is to reduce the overall time
13 of project execution. This sequencing approach requires that both procurement and
14 construction will start and progress before engineering is complete. As an example, as
15 noted earlier, KCP&L authorized preparation of the Unit 2 boiler and turbine generator
16 specifications in late 2005, recognizing that this major equipment must be committed
17 before the plant layout can be finalized and foundation design can be started.

18 The Boiler contract for the Iatan Unit 2 project was awarded to Alstom on the basis of a
19 performance specification to enable that scope of work to be executed under an EPC
20 delivery method and fixed price contract, where Alstom had full responsibility for
21 engineering, procurement and construction of the equipment purchased.

22 When a contract is awarded on an EPC basis very little detailed engineering is required
23 from the Owner Engineer though performance specifications will need to be well

1 developed. The Turbine Generator scope of work was awarded as an “engineer and
2 fabricate” delivery method and with a lump sum Purchase Order contract approach,
3 where Toshiba was responsible for the engineering and fabrication of the Turbine
4 Generator. Again, though minimum detailed engineering is required, well developed
5 performance specifications are required to bid this work and award a contract. Little
6 detailed engineering design can be started prior to having details of the equipment from
7 these two primary project component equipment suppliers. As also noted earlier in this
8 testimony KCP&L retained B&V to prepare these two technical performance
9 specifications.

10 However, construction only contracts, such as the foundation contract with Kissick,
11 require that the detailed engineering and design be complete and the KCP&L procured
12 equipment and materials be available prior to the start of that work. This does not mean
13 the designs are complete for the entire contract scope of work prior to award of the
14 foundation contract, only that those foundation designs are completed and delivered to
15 the foundation contractor as needed to support the planned completion of each
16 foundation.

17 Based on Pegasus-Global’s review of the Owner Engineer performance and the nature of
18 the contracts awarded, the construction of the Iatan Project was not impeded by
19 B&McD’s engineering.

20 Q:

** [REDACTED]

[REDACTED]

[REDACTED]**

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
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10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]**
17 Q: ** [REDACTED]
18 [REDACTED]**
19 A: ** [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]

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1 [REDACTED]

2 [REDACTED]

3 Q: ** [REDACTED]
4 [REDACTED]
5 [REDACTED]

6 A: ** [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]**

12 Q: **What was your ultimate conclusion relative to KCP&L's management of Burns &
13 McDonnell?**

14 A: Pegasus-Global found KCP&L's management of B&McD to be both reasonable and
15 prudent.

16 Q: **Will you explain why you found the initial Iatan Unit 1 project management and
17 contract approach prudent?**

18 A: In reviewing project delivery options, KCP&L found that demand for engineering and
19 construction services had risen from what had existed in early 2004, forcing them to
20 include a variety of options in their review. Strategically, KCP&L had a range of delivery
21 method options, ranging from EPC (single source responsibility for engineering and
22 construction) to separate contracts for engineering and various contracts for vendors and
23 contractors (typically called a multi-contract approach). In analyzing this overall strategy

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1 KCP&L management determined that the recently approved CEP program (by the
2 Kansas and Missouri Commissions in mid 2005) would require enhanced project
3 management personnel and staff, as previously discussed earlier in my testimony.

4 ** [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]

10 [REDACTED] ** These results indicate that these companies were
11 making decisions based on their own particular circumstances, including their evaluation
12 of competitive options, and that there is no single "prudent" choice for project
13 construction during this time period. (B&McD survey of coal plants 090207)
14 Pegasus-Global found that KCP&L not only solicited expert advice but also took this
15 advice into account in evaluating project delivery options. KCP&L concluded that project
16 completion could be accomplished within the approved CEP program schedule by
17 engaging in a combination of EPC and multi contract delivery methods for the Iatan Unit
18 1 project.

19 **Q: What project delivery methodology and contract approach was selected for the**
20 **Iatan Unit 2 project?**

21 **A: Ultimately, KCP&L used a mixture of delivery methodologies and contract approaches**
22 **for the execution of the Iatan Unit 2 project:**

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- 1 • KCP&L selected an EPC delivery methodology to execute the primary piece of
2 engineered equipment – the boiler. That delivery methodology is typically used
3 when the scope of work is based on operational specifications utilizing a fixed
4 price contracting approach and involves both manufacture and
5 erection/installation of that equipment on site.
- 6 • KCP&L selected a straight equipment procurement delivery methodology to
7 execute another crucial piece of engineered equipment – the turbine generator. As
8 a manufactured piece of equipment the use of a fixed price contract approach
9 based on operational specifications for engineering and manufacture is typical.
- 10 • KCP&L contracted for engineering services under a time and materials
11 contracting approach which is typical within the industry when the project
12 involves design of a new facility predicated on several “operational
13 specifications” supplied by the owner and the primary engineered equipment
14 suppliers.
- 15 • KCP&L originally selected a multi-prime delivery method for the BOP scope of
16 work, with KCP&L acting as its own Construction Manager. KCP&L later
17 modified its multi-prime delivery method by engaging Kiewit as a General
18 Contractor responsible to complete the BOP construction.

19 Pegasus-Global found that KCP&L followed a methodical process during the selection of
20 each of its project delivery methodologies and contracting approaches, which resulted in
21 decisions which were reasonable and prudent given the information available at the time
22 those decisions were made.

1 **Q: What was the basis for your examination of KCP&L's choice of project delivery**
2 **methodology and contract approach?**

3 A: A key consideration in selection of delivery method and contract approach is to align the
4 delivery methodology and contracting approach with the risk profile of the project to be
5 executed. One of the crucial decisions for an owner is to select a project delivery method
6 and contract approach which enables it to allocate project risks appropriately while
7 maximizing the ability to meet the project goals and objectives. The goal is not for the
8 owner to attempt to shed all risk to a contractor; first of all it is simply not possible, even
9 under an EPC delivery methodology and a Fixed Price, Date Certain, Turn Key contract
10 approach for an owner to shed all project risk. Second, the more risk an owner sheds, the
11 higher the contracting cost, as no contractor will knowingly accept a risk without assuring
12 that the compensation to be received is as high or higher than the cumulative impact of
13 those risks should they manifest on the project. A primary tenet of successful risk
14 allocation is that a risk element should be allocated to the project party that is best able to
15 manage and control the specific risk element in question. No owner, including a utility,
16 should blindly select a delivery method simply because others appear to be using it.

17 To preliminarily judge whether KCP&L followed a management process that generally
18 reflected the best industry practice to capture and appropriately allocate risk for the Iatan
19 Unit 2 project, Pegasus-Global employed a table which Pegasus-Global has used for over
20 ten years as a reference guide. The table is based on an approach presented by two senior
21 Bechtel Corporation officers at an American Society of Civil Engineers (ASCE)

1 conference in 1997,⁴¹ and employs various general project criteria which generally
2 describe risk allocation conditions between project parties. Using the table enables an
3 owner to identify the project delivery methodologies and contract approach which
4 provide the best “fit” to the project risk profile for that project. An example of how the
5 table is employed to match various criteria with delivery methods and contracting
6 approaches has been provided below in **Table 1 – Project Execution Conditions and**
7 **Risk Allocation Re: Iatan Unit 2 Alstom Contract** and **Table 2 – Project Execution**
8 **Conditions and Risk Allocation Re: Iatan 2 Kiewit Contract in 2007**. Tables 1 and 2
9 provide an indication of which project delivery methods and contract approaches match
10 the risk profile established for the project for the Boiler Island and BOP scopes of work.⁴²

11 Pegasus-Global uses the table to perform a general check as to whether the owner’s
12 processes met the general expectation at the time based upon what the owner knew or
13 should have known.

14 **Q: Can you explain your review and findings concerning the Alstom delivery method**
15 **and contract approach selected by KCP&L?**

16 **A:** Yes. An examination of the Iatan Project records showed KCP&L first completed its
17 examinations of the future need for power and had developed a consolidated plan for
18 addressing that future need, one element of which was to construct a second coal fired
19 unit at the Iatan power station. Next Pegasus-Global found that KCP&L had engaged

⁴¹ “*Choosing the Right Delivery System*,” By Charles M. Spink, P.E., F.ASCE, Construction Congress V, Managing Engineered Construction in Expanding Global Markets, Proceedings of the Congress, 1997, American Society of Civil Engineers

⁴² Over the years, as risk management practices and programs have evolved, Pegasus-Global has adjusted the original table in order to reflect the latest industry thinking as to the best methods for allocation and management of specific risk elements.

1 consultants such as Schiff Hardin, B&V and B&McD to provide it with the information
2 and data it needed to understand the current state of the power project industry. KCP&L
3 management received advice relative to the general progress steps through which a power
4 project proceeds, including identification of critical equipment decisions, timing of those
5 decisions, and the interdependence of actions and decisions. Pegasus-Global then found
6 that KCP&L used the information gained from its advisors to develop its project risk
7 profile and prioritize the order of its actions and decisions for managing those risk
8 elements.

9 Specific to the boiler island project delivery and contract approach decisions Pegasus-
10 Global examined the project conditions for the period during which KCP&L made its
11 delivery method and contract approach selections. The boiler island is the project element
12 which drives the majority of project detailed design, cost and schedule; as the design,
13 manufacture of the boiler components and construction of the boiler island collectively
14 take the longest time to perform. In addition the boiler island has the greatest influence on
15 the completion of detailed design and construction for the BOP; simply, without the
16 complete boiler design the detailed design of the BOP cannot be finalized, issued or bid.

17 In the latter half of 2005 and early into 2006, KCP&L was preparing to bid the boiler
18 island, the first step in the long process which would ultimately result in the completion
19 of the Iatan Unit 2 project. At that time the industry as a whole was in the midst of a
20 construction boom which was quickly locking up what is known within the industry as
21 the "manufacturing queue" for major engineered equipment such as boilers and turbine

1 generators.⁴³ Pegasus-Global found that KCP&L was cognizant of the need to secure a
2 boiler contractor as early as possible in the project life cycle and acted quickly to have a
3 performance specification prepared which could be expeditiously bid and awarded.

4 Because of the highly specialized nature of the equipment involved, utility owners do not
5 take the risk of actually engineering or designing the boiler equipment, those risks are
6 allocated to the manufacturer awarded the boiler equipment scope of work. To allocate
7 the risk to the manufacturer, utility owners procure boiler island equipment using a
8 performance specification; that is, the owner (through its engineer) develops the
9 performance requirements for the boiler (such as pressure, temperature, flow rates,
10 cooling and recapture characteristics, etc), but leaves all of the detailed engineering and
11 design of the equipment and appurtenances (the boiler island), and therefore allocates the
12 risk attached to that work, to the manufacturer.

13 The boiler components must be assembled and installed within the boundaries of the
14 Boiler Island, a task which is again very specialized and complex, involving a significant
15 level of project risk. Therefore, the utility owner will generally contract with the
16 manufacturer to do the installation as part of its direct scope of work or contract with the
17 manufacturer to directly oversee and manage a specialist contractor engaged to execute
18 that scope of work.

19 Among the risk elements attached to the boiler island are the following:

- 20 • Defective design of the boiler island equipment;

⁴³ KCP&L Strategic Infrastructure Investments-- Quarterly Status Update Third Quarter 2006 and KCC Docket No. 04-KCPE-1025-GIE, page 9; Synapse Energy Economics, Inc., July 2008, David Schissel, Allison Smith and Rachel Wilson

- 1 • Defective installation/construction of the boiler island equipment;
- 2 • Cost overruns (design, procurement, manufacturing and/or installation);
- 3 • Schedule delays (design, procurement, manufacturing and/or installation);
- 4 • Failure of the completed boiler island to meet the performance specification set by
- 5 the owner; and
- 6 • Failure to properly test and commission the boiler island.
- 7 Once the project conditions and risk profile had been established, Pegasus-Global
- 8 examined the primary risks attached to the boiler island against the possible delivery
- 9 methods and contract approaches using **Table 1** as discussed earlier above, with the
- 10 following results:

TABLE 1 PROJECT EXECUTION CONDITIONS AND RISK ALLOCATION RE: IATAN UNIT 2 ALSTOM CONTRACT						
Choosing the Preferred <u>Project Delivery Methodology</u>, <u>Contracting Approach</u> <u>and Resultant Risk Allocation Expectations</u>⁴⁴						
	Project Delivery Methodology		Contracting Approach			KCP&L Choice Re: Iatan Unit 2
	Design Bid Build	EPC	Fixed Price	Unit Price	Cost Reimbursable	
Owner Considerations and Requirements						
Cost Control is Major Consideration		✓	✓	✓		*
Owner to Control Contingency		✓		✓	✓	
Bid Competition Required	✓	✓	✓	✓		*
Maximum Owner Involvement		✓			✓	*

⁴⁴ Modified by the author from "Choosing the Right Delivery System," by Charles M. Spink, P.E., F.ASCE, Construction Congress V, Managing Engineered Construction in Expanding Global Markets, Proceedings of the Congress, 1997, American Society of Civil Engineers, pages 663 – 671

**TABLE 1
PROJECT EXECUTION CONDITIONS AND RISK ALLOCATION
RE: IATAN UNIT 2 ALSTOM CONTRACT**

**Choosing the Preferred Project Delivery Methodology, Contracting Approach
and Resultant Risk Allocation Expectations⁴⁴**

	Project Delivery Methodology		Contracting Approach			KCP&L Choice Re: Iatan Unit 2
	Design Bid Build	EPC	Fixed Price	Unit Price	Cost Reimbursable	
Minimum Owner Involvement	✓		✓			
Owner Has No Oversight Capabilities	✓		✓			
Single Source Responsibility		✓	✓	✓	✓	*
Contractor In Part Provides Project Funding		✓	✓			N/A
Project Scope and Parameters						
Clear Scope Definition	✓	✓	✓	✓		*
Minimal Scope Definition	✓			✓	✓	
Scope/Complexity Defined, Quantities Uncertain	✓	✓	✓	✓		*
Minimal Scope Changes Expected	✓	✓	✓			*
Potential for Large Scope Changes		✓		✓	✓	
Tight Schedule		✓	✓	✓	✓	*
Volatile Project Environment		✓		✓	✓	*
Stable Project Environment	✓		✓			
Large Complex Project	✓	✓	✓	✓	✓	*
Primarily New Technology		✓		✓	✓	

1

2

As noted by the "tick marks" in Table 1 above, both the Owner Considerations and

3

Project Scope and Parameters significantly favor the use of an EPC delivery method (14

4

out of 18 total risk elements). Under the Contracting Approach both the Fixed Price and

1 Unit Price contract approaches appeared as the preferred contract approaches (12 out of
2 14 total risk elements). Using **Table 1**, Pegasus-Global confirmed that KCP&L's
3 selection process accounted for those risk elements most crucial to the choice of delivery
4 method and contract approach for the boiler island scope of work. KCP&L selected an
5 EPC delivery methodology and a Fixed Price contract approach as shown in the last
6 column of **Table 1**.

7 Pegasus-Global concluded that KCP&L's process for selection of delivery method and
8 contracting approach for the boiler island scope of work was reasonable and prudent
9 based on what was known, or reasonably could have been known by KCP&L relative to
10 industry and project conditions as of late 2005 and early 2006 and the risk profile for the
11 boiler island scope of work.

12 **Q: Can you explain Pegasus-Global's review and findings concerning the Kiewit**
13 **delivery method and contract approach selected by KCP&L?**

14 **A:** Pegasus-Global followed exactly the same process in examining KCP&L's selection of
15 delivery method and contract approach for the Kiewit contract that was used to examine
16 the Alstom contract. The risk elements specific to this scope of work focused around
17 execution of the BOP construction, as the risk for detailed design of the BOP had already
18 been allocated to B&McD. The Iatan Project record shows that initial attempts to allocate
19 this risk via either an EPC or GC delivery method, and a fixed price contracting
20 approach, met with no interest within the contracting community when first tested by
21 KCP&L in early 2006. As a result, KCP&L had no way in which to allocate that risk at
22 that time and was taking actions which would enable it to manage and control those risk
23 elements under a Multi-Prime methodology throughout 2006 and into 2007.

1 As often happens in mega-projects extending over several years, industry conditions
2 change relatively quickly and in late 2006 and early 2007 Kiewit, who previously had
3 declined to bid on the BOP scope of work under an EPC/GC methodology or fixed price
4 contract approach, contacted KCP&L with an offer to assume the responsibility for the
5 BOP scope of work as a GC, although it was unwilling to accept a fixed price contracting
6 methodology. The decision to change delivery methodology for the BOP scope of work
7 needed to be evaluated against the impact that change would have on the project's risk
8 profile and, in particular, the reallocation of those risks from KCP&L to Kiewit.

9 The document record showed that KCP&L and its advisors carefully examined the
10 impact to the Iatan Project's risk profile of changing the delivery method and ultimately
11 determined that although the core elements would not change, the allocation of those risk
12 elements could be improved; the project risk profile could be altered substantially by
13 shifting certain of those risk elements to Kiewit, a party that at that time was better able
14 to manage and control those risk elements which existed within the BOP scope of work.

15 Pegasus-Global again used the delivery method and contract approach table to examine
16 KCP&L's decision making process relative to the selection of delivery method and
17 contract approach, as shown in **Table 2** below:

**TABLE 2
PROJECT EXECUTION CONDITIONS AND RISK ALLOCATION
RE: IATAN UNIT 2 KIEWIT CONTRACT IN 2007**

**Choosing the Preferred Project Delivery Methodology, Contracting Approach
and Resultant Risk Allocation Expectations**

	Project Delivery Methodology		Contracting Approach			KCP&L Choice: Re: Iatan Unit 2
	Design Bid Build	EPC	Fixed Price	Unit Price	Cost Reimbursable	
Owner Considerations and Requirements						
Cost Control is Major Consideration		✓	✓	✓		*
Owner to Control Contingency		✓		✓	✓	*
Bid Competition Required	✓	✓	✓	✓		
Maximum Owner Involvement		✓			✓	*
Minimum Owner Involvement	✓		✓			
Owner Has No Oversight Capabilities	✓		✓			
Single Source Responsibility		✓	✓	✓	✓	*
Contractor In Part Provides Project Funding		✓	✓			N/A
Project Scope and Parameters						
Clear Scope Definition	✓	✓	✓	✓		*
Minimal Scope Definition	✓			✓	✓	
Scope/Complexity Defined, Quantities Uncertain	✓	✓	✓	✓		*
Minimal Scope Changes Expected	✓	✓	✓			
Potential for Large Scope Changes		✓		✓	✓	
Tight Schedule		✓	✓	✓	✓	*
Volatile Project Environment		✓		✓	✓	*
Stable Project Environment	✓		✓			
Large Complex Project	✓	✓	✓	✓	✓	*
Primarily New Technology		✓		✓	✓	

1
2 As noted by the "tick marks" in **Table 2** above, both the Owner Considerations and
3 Project Scope and Parameters significantly favor the use of an EPC delivery method (14
4 out of 18 total risk elements). Under the Contracting Approach both the Fixed Price and
5 Unit Price contract approaches appeared as the preferred contract approaches (12 out of
6 14 total risk elements). Using **Table 2**, Pegasus-Global confirmed that KCP&L's
7 selection process accounted for those risk elements most crucial to the choice of delivery
8 method and contract approach for the BOP scope of work. KCP&L decided to revise its
9 project execution plan for the BOP scope of work using an EPC type delivery
10 methodology and a Unit Price contract approach as shown in the last column of **Table 2**.

11 As engineering and procurement were too far advanced to be fully re-allocated to Kiewit
12 for the BOP scope of work, KCP&L ultimately selected a EPC delivery methodology
13 under which Kiewit would assume full responsibility for the actual construction of the
14 BOP scope of work, while providing input into engineering (i.e. construability reviews)
15 and taking responsibility (and risk) of certain material and specialist subcontract
16 procurement.

17 Because Kiewit was not involved in the initial BOP planning, engineering and
18 procurement activities it was understandably unwilling to accept a Fixed Price contract
19 approach; therefore KCP&L and Kiewit negotiated a Unit Price contract. That
20 compromise contract approach was reasonable both from the perspective of the **Table 2**
21 results shown above and in consideration of the status of the Iatan Project at the point in
22 time when the decision was made to modify the delivery method for the BOP scope of
23 work. Pegasus-Global concluded that KCP&L's process for selection of its initial

1 delivery method for the BOP scope of work and its revisions to that delivery method and
2 contracting approach for the BOP scope of work were reasonable and prudent based on
3 what was known or reasonably could have been known by KCP&L relative to industry
4 and project conditions as of 2006 and 2007.

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED] ** [REDACTED]

9 [REDACTED]

10 [REDACTED] **

11 A: [REDACTED] ** [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

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[REDACTED]

Q: Did your examination lead to any disagreements with the Missouri Staff's analysis and testimony relative to KCP&L's selection of the project delivery methodology for the Iatan Unit 2 project?

A: Yes. The Missouri Staff report [pages 21-22] indicates that KCP&L's decision to choose a multi-prime contracting approach led to Iatan Project cost overruns and document control issues as the result of KCP&L's failure to employ a strong, capable and experienced Project Management or Construction Manager. However, it is my opinion that the Staff's finding is flawed for a number of reasons including:

- The Staff has not demonstrated any independent analysis as required under the GAAS standards, which it purported to have used, and instead simply relies on testimony by Kansas Commission Staff consultant testimony of Mr. Drabinski (deemed by the Kansas Commission November 22, 2010 Order to be unreliable and gave no weight to it), and "sound bites" taken from KCP&L internal audits.
- The Staff inappropriately used KCP&L internal audits to criticize KCP&L's multi-prime contracting approach decision ignoring the fact that the process of conducting on-going internal audits during a complex construction project is considered part of the prudent management decision-making process.

- 1 • As Pegasus-Global has described earlier in this testimony, KCP&L did staff an
2 organization commensurate with the phase of the Iatan Project and the contracting
3 approaches taken. KCP&L, using input from its advisors and the internal audits
4 continued to improve its staffing and organization per the very same
5 recommendations quoted by the Staff demonstrating reasonable and prudent
6 management actions.

7 **Q: What in summary are Pegasus-Global's findings relative to KCP&L's selection of**
8 **the project delivery methodology during the period from 2005 through 2006?**

9 A: Pegasus-Global found that KCP&L solicited expert advice and took this advice into
10 account in evaluating project delivery options. Further, with the assistance of those
11 experts and its own information sources, KCP&L continued to explore all of its project
12 delivery options up until the point in time when a final decision had to be made in mid-
13 2006. Ultimately KCP&L concluded that its project risks could be managed and its
14 project goals and objectives could be achieved within the approved CEP program
15 schedule by engaging in a combination of EPC and multi-prime delivery methods for the
16 Iatan Unit 2 project. KCP&L's decision is consistent with Pegasus-Global's experience
17 on mega-projects in all industry sectors for over four decades.

18 KCP&L's further recognized that such a strategy shifted the focus of some of the
19 management elements of the project risk profile, the most significant of which required
20 KCP&L to enhance and expand its internal project management staff and organization to
21 assume the management responsibilities for the BOP scope of work under the multi-
22 prime BOP delivery methodology. KCP&L delivery methodology decisions, and the
23 decision making processes KCP&L followed, exhibited good management and fell within

1 a zone of reasonableness. Pegasus-Global concludes these decisions and the decision
2 making processes were prudent.

3 **Q: Pegasus-Global described the initial decisions regarding KCP&L. Did KCP&L**
4 **evolve and alter this Delivery Methodology and Contract Approach during the**
5 **Iatan Unit 2 project execution?**

6 **A:** Yes. As Pegasus-Global noted earlier, with every decision made, action taken and
7 unforeseen event which occurs a project's risk profile changes, and with every change in
8 a project's risk profile management must make decisions and take actions to adjust a
9 project's course to meet and overcome those changes. Mega-projects such as the Iatan
10 Unit 2 project are confronted with an even greater range of issues which require
11 adjustments to the project execution plans. Again, prudence is judged by the decisions
12 and actions taken by management within the context of what was known or should have
13 been known to management at a specific point in time. As the project environment
14 evolves, management decisions and actions must evolve to meet those changing
15 conditions. In evaluating prudence Pegasus-Global examines how management reacted to
16 changes in the project environment as the project moves through its life cycle.

17 The speed with which the Iatan Unit 2 project was evolving increased throughout 2006
18 and 2007, as a myriad of decisions were made and actions were taken to solidify the
19 project execution plan and to varying degrees each decision by KCP&L altered the
20 project environment within which management was operating. The most critical
21 decisions within the project environment involved early engineering to establish the
22 operating specifications for the primary engineered equipment, soliciting proposals for
23 that equipment and awarding that equipment. As described earlier, during 2006 the

1 turbine generator and boiler island engineered equipment were specified, solicited and
2 awarded.⁵⁶ Those actions set the operational and to a large extent the physical parameters
3 of the plant. Those decisions also began to shape the project execution environment for
4 all subsequent work on the project. For example, the boiler island was awarded to Alstom
5 on an EPC delivery and fixed price, date certain contract basis,⁵⁷ an action which
6 produced certain elements of the project environment which now had to be factored into
7 all subsequent decisions and actions by KCP&L management. For example, KCP&L's
8 management structure, staffing and execution plans had to adjust to that element of the
9 project's environment in order to insure that the decisions made and actions taken going
10 forward with the project aligned with that change in the environment.

11 Because KCP&L found no contractor interest in bidding the full project or even the BOP
12 scope of work on an EPC basis, with a date certain completion or a fixed price, a
13 reasonable option moving through 2006 was for KCP&L to execute the BOP under a
14 multi-prime delivery structure for that scope of work acting as its own construction and
15 project manager. One consequence of that choice was that the risk elements which
16 accompany that scope of work would remain with KCP&L, with minimal risk allocation
17 possible among the various prime contractors possible.

18 However, in December 2006, Kiewit approached KCP&L with an offer to assume
19 responsibility for the BOP scope of work. According to Kiewit, one of its projects had
20 been terminated, which freed an experienced management team and construction force

⁵⁶ KCP&L Strategic Infrastructure Investment Status Report First Quarter 2006, pages 27 & 28, April 28, 2006

⁵⁷ KCP&L Strategic Infrastructure Investment Status Report Second Quarter 2006, page 7, July 31, 2006, and KCP&L Strategic Infrastructure Investments – Quarterly Status Update, Third Quarter 2006, KCC Docket No. 04-KCPE-1025-GIE, page 34

1 for reassignment to another project. As noted earlier in this testimony, Kiewit had been
2 approached by KCP&L in the spring of 2006 to determine any interest in the BOP scope
3 of work but Kiewit had declined due in part to the fact that its forces were fully
4 committed at that time. When this condition changed it was not at all unreasonable for
5 Kiewit to contact KCP&L in an attempt to secure that work for its now unassigned
6 management and construction forces.⁵⁸

7 **Q: What did Pegasus-Global find regarding KCP&L's examination of alternatives to**
8 **its Multi-Prime delivery method to the BOP contracting methodology in early 2007?**

9 A: The unsolicited proposal from Kiewit gave KCP&L an opportunity to reexamine its
10 initial plans from a perspective which did not exist when the original decision was made
11 to execute the BOP using multiple-prime contractors. The unsolicited proposal also
12 offered KCP&L an opportunity to significantly change the project risk profile going
13 forward, which meant that as any reasonable project manager (and owner) would do,
14 KCP&L had to evaluate that opportunity. Among the factors which KCP&L took into
15 account during that evaluation included the following:

- 16 • Kiewit was a large, well known contractor with an immediately available and
17 experienced organization that had demonstrated its capability to manage and
18 execute the complex BOP scope of work on a power project for many years.
- 19 • In late 2006 the Iatan Unit 2 project was poised to enter the construction phase of
20 the project. Detailed engineering was being released for bid/construction, initial

⁵⁸ Status Report on Comprehensive Energy Plan Projects, Schiff Hardin, page 3, January 10, 2007

1 construction civil work had been bid and awarded and the procurement of the
2 multi-prime contracts was scoped and was being prepared for solicitation.

- 3 • At this stage KCP&L had expanded its internal staff at the project management
4 level; had drafted the primary contract administration policies, procedures, and
5 processes; had identified and in some cases installed management and control
6 systems; and, adopted a project control line item budget for the Iatan Unit 2
7 project,⁵⁹
- 8 • KCP&L was in the process of recruiting and hiring its construction “line and
9 support” staff; was preparing to solicit and procure the prime specialty
10 contractors; was installing (activating) the project-specific management and
11 control systems; and, had initiated Contract Administrative actions.
- 12 • KCP&L had utilized staff from both B&McD and Schiff Hardin to assist it in
13 those tasks it had undertaken relative to cost estimating, procurement, permitting
14 and very early construction (demolition and early site preparation), relying on
15 existing project-control processes.

16 Kiewit’s unsolicited proposal provided an opportunity to re-examine the BOP delivery
17 methodology before KCP&L had to fully and finally commit to the multi-prime delivery
18 methodology towards which it had been working. ** [REDACTED]

19 [REDACTED]

⁵⁹ KCP&L Strategic Infrastructure Investment Status Report, Fourth Quarter 2006, pages 6 – 10 and Section 6,
February 15, 2007

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During its evaluation, KCP&L recognized that acceptance of the Kiewit proposal would, in effect, amount to a “sole source” award of a significant amount of the Iatan Unit 2 scope of work. KCP&L examined the various ramifications of that fact and found among other things that the process of holding a competitive bid for other possible General Contractors would have had a significant impact on the project execution schedule and likely would have taken between four and six months. Such a delay would affect the construction schedule and the procurement and engineering schedules. Ultimately the situation involved a judgment decision weighting the gains possible by allocating those risk elements arising from the execution of the BOP scope of work against the potential schedule delay impacts which would result from any attempt to solicit other bids. As the construction market conditions had not changed significantly, it was entirely possible that even had the BOP scope of work been bid, Kiewit may have been the only responsive bidder.

Working through its evaluation process KCP&L settled on only two practical choices:

- Reject the Kiewit proposal and continue with the original multi-prime execution methodology;
- Accept the Kiewit proposal and transition from the multi-prime methodology to a GC methodology.

⁶⁰ Schiff Hardin Report, January 10, 2007, page 17

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