

Exhibit No.:  
Issue: Iatan Project Overview and Iatan 2  
Prudence  
Witness: Robert N. Bell  
Type of Exhibit: Direct Testimony  
Sponsoring Party: Kansas City Power & Light Company  
Case No.: ER-2010-\_\_\_\_  
Date Testimony Prepared: June 4, 2010

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO.: ER-2010-\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**ROBERT N. BELL**

**ON BEHALF OF**

**KANSAS CITY POWER & LIGHT COMPANY**

**Kansas City, Missouri  
June 2010**

\*\*\* [REDACTED] \*\*\* Designates "Highly Confidential" Information  
Has Been Removed.  
Certain Schedules Attached To This Testimony Designated "(HC)"  
Have Been Removed  
Pursuant To 4 CSR 240-2.135.

**Bell  
Direct  
NP**

**DIRECT TESTIMONY**

**OF**

**ROBERT N. BELL**

**Case No. ER-2010-\_\_\_\_\_**

1 **Q: Please state your name and business address.**

2 A: My name is Robert N. Bell. My business address is 1200 Main Street, Kansas City,  
3 Missouri 64105.

4 **Q: By whom and in what capacity are you employed?**

5 A: I am employed by Kansas City Power & Light Company ("KCP&L" or the "Company")  
6 as Senior Director of Construction for the Iatan Unit 2 Project.

7 **Q: Please summarize your role with respect to the construction of Iatan Unit 2?**

8 A: As the Senior Director of Construction, and since the time I joined the Iatan Unit 2  
9 Project, I have been responsible for overseeing the construction work by the major  
10 contractors, ALSTOM Power, Inc. ("ALSTOM") and Kiewit Power Constructors Co.  
11 ("Kiewit") as well as the other contractors on site. With the Iatan Unit 2 Project's  
12 transition from the construction phase to the start-up and commissioning phase, I am  
13 currently responsible for overall management of the project along with Brent Davis, who  
14 is responsible for the interface with KCP&L's Operations. The managers for the KCP&L  
15 Construction, Engineering and Start-up Teams report to me. Mr. Davis and I are  
16 responsible for coordinating their efforts.

17 **Q: To whom do you report at KCP&L?**

18 A: I have a dual reporting relationship to Mr. William H. Downey, the President and Chief  
19 Operating Officer and to Mr. Scott Heidtbrink, the Vice President of Supply.

1 Q: Have you ever testified before the Missouri Public Service Commission (“MPSC”)?

2 A: No, I have not.

3 Q: Could you please describe your education and work history?

4 A: Yes. I received my Bachelor of Science degree in Electrical Engineering from the  
5 University of Kentucky in 1981. Since that time, I have worked in numerous positions  
6 related to utility construction. From May 1981 to September 1982, I was a field engineer  
7 at the Tennessee Valley Authority, where my responsibilities included testing and  
8 troubleshooting nuclear, coal and hydro generation, transmission and distribution  
9 equipment. From 1982 to 1997, I held the positions of Construction Manager, Start-up  
10 Manager, and Senior Controls Specialist for General Electric International (“GE”).  
11 During my 15 years with GE, I managed the construction and start-up support of eight  
12 Frame 5 gas turbines, three heat recovery steam generators (“HRSGs”) and a  
13 70 megawatt (“MW”) steam turbine in Fayetteville, North Carolina. I also managed craft  
14 labor for the construction of the first GE 7F combined cycle power plant and performed  
15 the electrical start-up in Richmond, Virginia; managed electrical craft for retrofit of  
16 twenty Frame 5N and 7B combustion turbines; and performed the MK 4 start-up in  
17 Memphis, Tennessee. Also while with GE, I was a Team Leader in the Turbine Controls  
18 and Combustion Services for development of MK 6 Integrated Control System (“ICS”)  
19 power plant control system as well as performed performance tuning and start-up of  
20 multiple fossil units worldwide.

21 In 1997, I started work with Black & Veatch in its Power Division as the Project  
22 Manager for Y2K Projects, which we implemented for nine different utilities. In 1999, I  
23 was promoted to Vice President of Strategic Initiatives, where I worked to reorganize the

1 Power Division within the company. From 2004 until my arrival at KCP&L in March of  
2 2009, I was Vice President and Director of Programs for Black & Veatch's Special  
3 Projects Corp. During this time, I was Program Director of the energy projects that were  
4 part of the \$1.4 billion USAID Afghanistan Infrastructure and Rehabilitation Program.  
5 My duties included responsibility for all home office support and in-country engineer-  
6 procure-construct ("EPC") activities. The projects included as part of the program were  
7 power plants, transmission and distribution, hydro-electric dams, and establishing power  
8 purchase agreements. I was also Project Manager of the U.S. Army Corp of Engineers  
9 Transatlantic Programs Center ("CETAC 1") reconstruction contract in Iraq with  
10 responsibility for the installation and start-up of two new combustion turbine power  
11 plants. In addition, it was my responsibility to budget and manage all business-unit  
12 overhead costs as well as interface with and manage the costs from Corporate Shared  
13 Services (Finance, CIO/IT, Procurement, Insurance/Risk Management and Human  
14 Resources). I was the business unit representative for the Corporate Services Board, the  
15 group that develops and implements all budgets, processes and procedures for Black &  
16 Veatch Corporation.

17 **Q: Did you replace anyone when you were hired in March of 2009 to work on the Iatan**  
18 **Unit 2 project?**

19 **A:** No. At the time I was hired by KCP&L, the Iatan Unit 1 project was nearing completion  
20 and KCP&L was aware that the work on the Iatan Unit 2 Project in 2009-2010 would  
21 require additional management personnel. Prior to my arrival, Carl Churchman, the Vice  
22 President of Construction, had been functioning as the Iatan Unit 2 Project Manager in  
23 addition to his other duties. In addition, I understood that my expertise in start-up and



1 KCP&L utilizes is known as Total Cases Incident Rate ("TCIR"). TCIR is defined by the  
2 Occupational Safety and Health Administration ("OSHA") as the number of recordable  
3 incidents in a year, multiplied by 200,000 and divided by the total hours worked that  
4 year. KCP&L also tracks the aggregate number of first aid cases for internal use.

5 **Q: How does the Iatan Unit 2 Project compare to industry averages for safety**  
6 **performance?**

7 **A:** The Iatan Unit 2 Project has a very favorable record when compared to industry averages.  
8 The following chart illustrates the Iatan Unit 2 Project's safety performance to date when  
9 compared to the industry.

SAFETY STATISTICS as of March 14, 2010	YEAR	PROJECT	INDUSTRY <sup>1</sup>
	To-date	To-date	Average
Days Away, Restricted, Transfer (DART)	0.0	1.6	2.2
Total Case Incident Rate (TCIR)	0.5	3.2	4.2
First Aid Cases	35	890	
Total Work Hours (millions)	0.7	13.9	
Avg. Personnel On-Site/Day (Estimate) <sup>2</sup>	1,700	2,000	

<sup>1</sup> Industry Average Source: U.S. Bureau of Labor Statistics (2006 Preliminary Data)  
<sup>2</sup> Peaked at ~4,000 on November 19, 2008; currently ~1,250 on-site

17 **Q: In your experience in the industry, what is the value to a project from having a good**  
18 **safety record?**

19 **A:** Safety should always be the first consideration on any construction project because safety  
20 permeates everything else. If a project has a good safety reputation, it can attract good  
21 workers. If a project has low incident rates, it generally shows that the work is well  
22 managed and that the contractors have planned their work before going to the field. A

1 good safety record brings the overall cost down through higher productivity, reduced  
2 claims and fewer interruptions to the work.

3 **Q: How has the KCP&L Project Team managed safety issues such as those you**  
4 **describe since you arrived on the Iatan Unit 2 Project?**

5 **A:** KCP&L responded very appropriately any time significant safety events occurred. The  
6 owner, though not responsible for the implementation of each contractor's safety  
7 program, should instill the safety culture site-wide. I believe that we are doing that  
8 through our on-site safety team and daily reminders that safety has to be a primary  
9 consideration.

10 **Q: Overall, what is your opinion as to how KCP&L has managed the safety program**  
11 **on the Iatan Unit 2 Project?**

12 **A:** The safety program and the Iatan Unit 2 Project's safety record are very consistent with  
13 good practices I have seen in the industry.

14 **START-UP AND COMMISSIONING**

15 **Q: Who is responsible for start-up and commissioning of the Iatan Unit 2 Project?**

16 **A:** Organizationally speaking, start-up and commissioning is a joint effort primarily between  
17 KCP&L and ALSTOM, though Kiewit provides labor to support KCP&L's start-up  
18 activities. ALSTOM has responsibility to start-up its equipment, whether it is the boiler  
19 or the Air Quality Control System ("AQCS"), and begin its operation up to Provisional  
20 Acceptance of the Unit. In addition, KCP&L's start-up and commissioning team is  
21 responsible for checking out the equipment as it is being turned over by the contractors  
22 and verifying that it has met the conditions required under the applicable contract.

1 **Q: What is your role in connection with start-up and commissioning on the Iatan**  
2 **Unit 2 Project?**

3 A: As stated, I have management responsibility for the KCP&L start-up team, and the  
4 KCP&L start-up manager, Mr. Stan Prenger, reports to me. I have participated in the  
5 development and rebaselining of the project's start-up schedule and in the development  
6 and vetting of the project's April 6, 2010 Risk Assessment (Schedule RNB2010-1). I  
7 also have regular interface with ALSTOM's site team regarding all aspects of the  
8 project's coordinated start-up.

9 **Q: What was your involvement with the development and tracking of the contractors'**  
10 **work at the end of the project's construction phase?**

11 A: I participated in numerous reviews of the start-up schedule, including the meetings in  
12 which the Construction Turn-Over ("CTO") dates were worked out with the contractors.

13 **Q: What are CTOs on the Iatan Unit 2 Project?**

14 A: CTOs are the key interface points between Kiewit, ALSTOM and KCP&L related to the  
15 sequence of events for completing construction and the start-up and commissioning  
16 activities for the Iatan Unit 2 Project. For the schedule of the work to be fully  
17 coordinated, the CTO dates required complete buy-in by all affected parties and needed  
18 to support the Project's key milestone dates.

19 **Q: What was your involvement in the process of refining the Iatan Unit 2 CTO dates?**

20 A: I attended all of the meetings with the contractors, key members of the KCP&L Project  
21 Team and Schiff Hardin LLP and led many of the discussions. When we started the  
22 process of reviewing the CTO dates on June 24, 2009, there were thirty-two CTO dates  
23 that had conflicts that had to be resolved through logic or resource changes. By July 7,



1 2009, the parties had resolved each of the conflicts, and the contractors and KCP&L  
2 agreed to change the schedule to reflect these agreements.

3 **Q: Once the parties agreed to the CTO dates in July 2009, what occurred next with**  
4 **respect to the schedule?**

5 A: The contractors began working toward those agreed upon schedule dates and the KCP&L  
6 Project Team has been actively monitoring their progress and transparently reporting any  
7 issues that have occurred to the contractors' project management and to our management.  
8 While not all of the CTO dates were met, the creation of the CTO dates were essential for  
9 management of the completion of construction and allowed KCP&L to track the  
10 contractors' progress and make prudent decisions regarding mitigating the impacts of  
11 project delays.

12 **Q: What else have you observed relative to the preparation for start-up and**  
13 **commissioning?**

14 A: At Mr. Stan Prenger's direction, Start-up Manager, KCP&L started early with the  
15 training of the future operators utilizing dedicated operations staff. There are four  
16 separate operations functions that are the subject of training: control operators, plant  
17 equipment operators, plant equipment attendants, and process attendants. Each of these  
18 categories requires its own training regime. The operators-in-training have received  
19 classroom work, plant simulator time and on-the-job training during the start-up  
20 operations. By the end of the scheduled training, KCP&L targets having 50 operators  
21 fully trained to operate Iatan Unit 2. These efforts should not only help during start-up  
22 but will also result in the operators' familiarization with the equipment long before it has  
23 to be operated.

1 **Q: How is KCP&L tracking its training efforts?**

2 A: There are weekly metrics being generated regarding training that are presented to  
3 KCP&L's management on a weekly basis. An example of the metrics is attached to my  
4 testimony as Schedule RNB2010-2. This chart shows the hours budgeted for each of the  
5 classifications of operations personnel and the status of their work on a weekly basis. It  
6 also provides a percent complete with training over time against a planned number of  
7 hours. As of May 15, 2010, the date of Schedule RNB2010-2, training was 86 percent  
8 complete overall.

9 **Q: In your view, is KCP&L appropriately managing the start-up and commissioning**  
10 **process?**

11 A: Yes. As part of the cost and schedule reforecast discussed below, the KCP&L project  
12 team has re-reviewed all aspects of the project's start-up plan and has put into place a  
13 very solid plan for completing the start-up work. The effort spent by KCP&L to obtain  
14 the contractors' agreement to the CTO dates resulted in the work in the field proceeding  
15 more efficiently and effectively. In addition, the training and preparation for start-up by  
16 KCP&L is consistent with what I have observed in the industry. KCP&L is also  
17 transparently communicating the key dates needed through the schedule and in the  
18 communications with the contractors, and is reporting the status to our management  
19 every week. The start-up team is generally following the plan that was developed and  
20 has taken every opportunity to improve or mitigate the schedule as appropriate.

1 **Q: What are the risks normally associated with start-up of a plant the size and**  
2 **complexity of Iatan Unit 2?**

3 A: There are numerous potential risks, though the most prominent in my experience have  
4 been: (1) the potential impact of equipment failure or breakage or latent construction  
5 defects as equipment and systems are started for the first time; (2) achieving all of the  
6 performance requirements for operations, including supply of clean water and power; (3)  
7 tube leaks and pressure part welds breaking; (4) maintaining a proper sequence of work  
8 so that major components are commissioned in the correct order; (5) contractor  
9 performance; (6) latent engineering issues; (7) problems with instrumentation and  
10 controls, including tuning and performance issues; (8) shortages of key personnel; (9)  
11 risks from steam blows and piping restoration; (10) missing parts needed when breakage  
12 occurs; and (11) inexperienced or untrained workers making mistakes. There are  
13 certainly other things that go wrong during the start-up of a complex power plant like  
14 Iatan Unit 2, but those would stand out in my experience as the most likely events.

15 **Q: Are there any unique risks to Iatan Unit 2's start-up?**

16 A: Yes. The most prominent risk unique to Iatan Unit 2 in my experience is the potential  
17 problems ALSTOM may have with its T-23 boiler tube material. Company witness  
18 Brent Davis testifies to the potential issues with T-23 material. In addition, as Company  
19 witness Mr. Davis testifies, Iatan Unit 2 is a very complex, state-of-the-art plant, though  
20 one designed for high efficiency.

1 Q: In your opinion, has KCP&L taken all reasonable steps to mitigate or eliminate the  
2 potential problems that could occur during the start-up period?

3 A: Yes. While I certainly would never assume perfect performance or that latent issues will  
4 not occur, I believe we have done everything in my experience that is prudent and  
5 necessary to facilitate as good of a start-up as possible. I also believe that we have  
6 evaluated the likely risk to our start-up schedule. I will discuss these risks in more detail  
7 below.

8 **PROJECT MANAGEMENT OVERVIEW**

9 Q: Are you familiar with Company witness Brent Davis' testimony regarding the  
10 methods that are used by the KCP&L Project Team to manage the work of the  
11 contractors?

12 A: Yes. Mr. Davis and I share accountability for managing the contractors.

13 Q: Do you agree with Mr. Davis' testimony?

14 A: Yes. Mr. Davis discusses the project meetings and the Project Team's methods for  
15 managing the work. I agree with his assessment and believe that the level of active  
16 management that we have employed has been effective in identifying and mitigating the  
17 issues that have arisen.

18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]

1 **Q: Has the schedule for the Iatan Unit 2 Project changed since you joined KCP&L?**

2 A: Yes. The targeted completion range for the in-service date for the project has changed  
3 from the summer of 2010 to the fourth quarter of 2010.

4 **Q: On what occasions has KCP&L revised the projected schedule for the Project's in-**  
5 **service date?**

6 A: Company witness William Downey testifies regarding the revisions to the schedule that  
7 were approved by KCP&L's Board of Directors in July 2009, when the in-service date  
8 was adjusted from June 1, 2010 to July 31, 2010, and to changes approved by the  
9 KCP&L Board of Directors on April 6, 2010, resulting in the current in-service date.

10 **Q: Why was the in-service date for the project changed in July 2009?**

11 A At that time, it was determined that maintaining the June 1, 2010 target date would cause  
12 the project's contractors to significantly increase their manpower and accelerate their  
13 work, which had a high likelihood of contractor claims for schedule delays, compression,  
14 coordination/access problems and inefficiencies. KCP&L performed an analysis with the  
15 project's contractors that determined the least-cost alternative to complete the remaining  
16 construction work was to extend the in-service date by two months, from the June 1,  
17 2010 target to July 31, 2010. The negotiation of the CTOs between KCP&L, Kiewit and  
18 ALSTOM occurred in the summer of 2009. The agreement to these CTO dates resulted  
19 in a revised schedule for the Iatan Unit 2 Project that established the basis for KCP&L's  
20 conclusions regarding the schedule at this time.

1 Q: Was the MPSC Staff informed of the decision to change the in-service date in July  
2 2009?

3 A: Yes. KCP&L informed the MPSC Staff in a special meeting held at the Iatan Unit 2  
4 Project site on August 4, 2009.

5 Q: Was there an impact to the project's Control Budget Estimate from the change to  
6 the schedule in July 2009?

7 A: No. As Company witness Daniel Meyer testifies, the project team engaged in a  
8 reforecast of the project's cost and determined that there would be essentially no change  
9 to the project's estimate at completion ("EAC"), in large part due to the changes in the  
10 schedule.

11 Q: Has the project's forecasted in-service date changed subsequent to July 2009?

12 A: Yes.

13 Q: What are the circumstances of the change to the Project's schedule since July 2009?

14 A: As Company witness William Downey testifies, on January 13, 2010, KCP&L filed a  
15 Form 8-K with the U.S. Securities and Exchange Commission in which KCP&L  
16 disclosed, "Due to construction delays and unusually cold weather, Great Plains Energy  
17 and KCP&L currently anticipate that the in-service date of Iatan No. 2 will shift  
18 approximately two months into the fall of 2010." (Schedule WHD2010-2)

19 Q: How did KCP&L determine the extent of the delay that was reported in Schedule  
20 WHD2010-2?

21 A: As of January 13, 2010, the project's milestone for First Fire on Oil was projected to  
22 occur approximately two months later than First Fire on Oil date in the schedule  
23 approved by the Board of Directors in July 2009. KCP&L then commenced a cost and

1 schedule reforecast process for Iatan Unit 2 to determine the impact of this delay to First  
2 Fire on Oil to the in-service date.

3 **Q: Did KCP&L perform the cost and schedule reforecast in the first quarter of 2010?**

4 A: Yes. Company witness Daniel Meyer testifies regarding the process used for the cost  
5 reforecast. At the same time, the project team reviewed, identified and classified all  
6 potential remaining risks to startup period, taking into account the delays that had  
7 occurred to date. KCP&L generated a re-baselined start-up schedule that accounts for all  
8 reasonable risks and the remaining contractors' performance. \*\* [REDACTED]

9 [REDACTED]  
10 [REDACTED]

11 [REDACTED]\*\*

12 **Q: \*\* [REDACTED]**

13 [REDACTED]\*\*

14 A: \*\* [REDACTED]

15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]

21 [REDACTED]\*\*

1 Q: How did KCP&L analyze these risks?

2 A: The project team reviewed the project's start-up schedule and each of the activities that  
3 were needed, and assessed potential risk from its collective experience. Those risks were  
4 further assessed by subject matter experts who identified the potential event, the potential  
5 impact of that event and the likelihood such event may occur. That analysis was  
6 subjected to vetting by the Iatan Unit 2 Project's senior management team, including  
7 myself, Mr. Davis and Mr. Prenger, and by our outside consultants. Once the vetting was  
8 completed, the project team analyzed multiple potential schedule scenarios and arrived at

9 \*\* [REDACTED]  
10 [REDACTED]\*\* forecasted in-service date which accounted for the most likely scenario including  
11 impact from some of the risks that were discussed. The results of the project team's  
12 analysis were presented to the EOC on March 26, 2010. The process used and the details  
13 of the analysis are memorialized in the Risk Assessment completed by the project team  
14 on April 6, 2010 (Schedule RNB2010-1).

15 Q: What were the results of the reforecast of the project's Control Budget Estimate?

16 A: As Company witness Daniel Meyer testifies, the project's EAC was revised from  
17 \*\* [REDACTED] \*\*.

18 Q: Do you believe that the current reforecast includes sufficient contingency for  
19 managing and mitigating the risks contemplated by the project team in the Risk  
20 Assessment (Schedule RNB2010-1)?

21 A: \*\* [REDACTED]  
22 [REDACTED]  
23 [REDACTED]



1

[REDACTED]

2

[REDACTED]\*\*

3 **Q: Was the MPSC Staff informed of KCP&L's assessment of the project's schedule?**

4 A: Yes. Company witness Brent Davis testifies the Staff was provided with this information  
5 at a special meeting at the MPSC's offices on April 15, 2010.

6 **Q: Do you believe that mismanagement of the project by KCP&L resulted in the delay  
7 to the project acknowledged in the April 8, 2010 disclosure?**

8 A: No. While KCP&L has not engaged in an exhaustive forensic review of the causes of the  
9 project's delays, I believe at this time that the delays that occurred culminating with  
10 KCP&L's public disclosures were due to the compounding effects of contractor  
11 performance, poor weather, compression of start-up activities and access issues.

12 **Q: Does that conclude your testimony?**

13 A: Yes, it does.

**HIGHLY CONFIDENTIAL**



**SCHEDULE RNB2010-1**

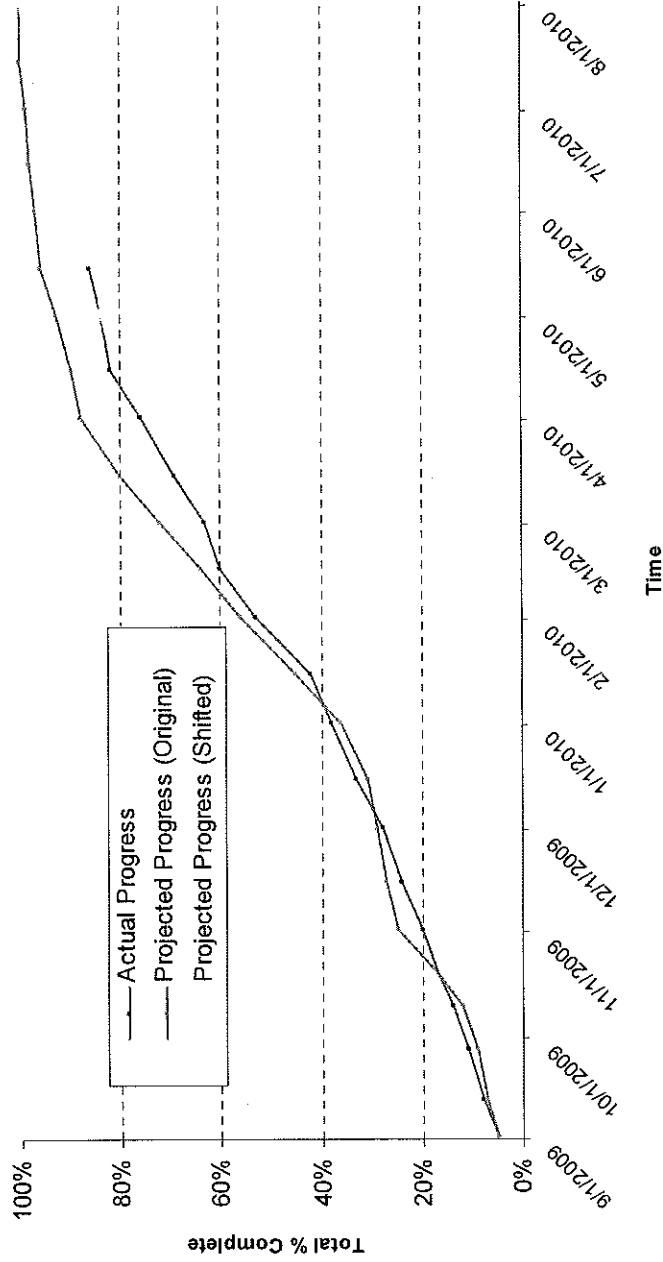
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# Iatan Station Unit 2 Pre-Startup Training Report

(May 15, 2010)

## Overview:

Projected vs. Actual Progress



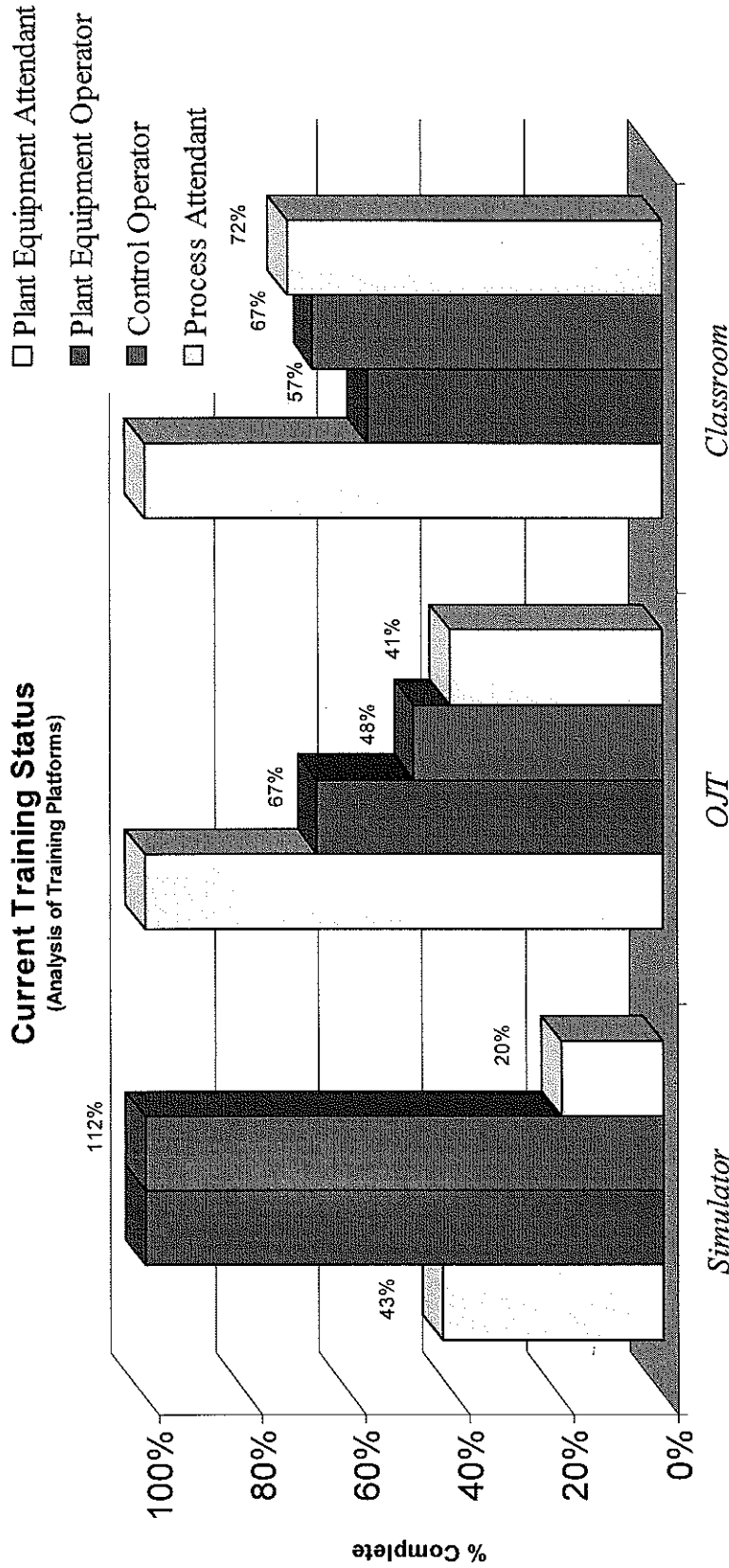
**Overall Status: 86% Complete**

NOTE: Systems training originally projected for February 2010 will be conducted after steam blows, therefore our projected progress has shifted (Green Line). This shift does not currently impact the overall completion target of August 1, 2010.

# Iatan Station Unit 2 Pre-Startup Training Report

(May 15, 2010)

General Analysis:



<u>PEA</u>		<u>PEO</u>		<u>CO</u>		<u>PA</u>	
Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete
1377.0	>100%	4321.8	91%	9554.4	80%	5372.0	47%

# Iatan Station Unit 2 Pre-Startup Training Report

(May 15, 2010)

Detailed Analysis:

System Code	System Description	PEA		PEO		CO		PA	
		Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete	Baseline Hours Estimate	Percent Complete
AA01	Ammonia Storage	9.0	44.4%	9.0	38.9%	36.0	47.2%	45.0	11.1%
OCA01/2CA01	Compressed Air System	36.0	116.7%	63.0	77.8%	96.0	37.5%	0.0	N/A
2CA01	Compressed Air System (Merged into the CA curriculum)	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
CEMS	Continuous Monitoring System	0.0	N/A	0.0	N/A	30.0	0.0%	0.0	N/A
CG01	Carbon Dioxide	0.0	N/A	22.5	33.3%	36.0	15.3%	0.0	N/A
CG02	Hydrogen	0.0	N/A	27.0	20.4%	60.0	0.0%	0.0	N/A
CN02	Circulating Water	36.0	204.2%	45.0	228.9%	108.0	145.4%	15.0	0.0%
CN05	Circulating Water Chem Feed	18.0	30.6%	18.0	77.8%	30.0	41.7%	75.0	16.0%
CN06	Condenser Vacuum	18.0	55.6%	45.0	38.9%	84.0	44.6%	0.0	N/A
DCS	Distributed Control System	36.0	379.2%	72.0	386.1%	144.0	243.1%	60.0	N/A
DR01	Plant Drains	36.0	50.0%	36.0	36.1%	48.0	53.1%	75.0	0.0%
EC01	Aux Circulating Water	18.0	138.9%	18.0	122.2%	48.0	77.1%	0.0	N/A
EC02	Closed Cooling water	18.0	1138.9%	54.0	343.5%	120.0	122.9%	0.0	N/A
EL	Electrical Dist. System (480 Volt, 6.9KV, and 13.8KV Dist.)	72.0	101.4%	81.0	159.9%	312.0	52.7%	120.0	6.7%
EDC125	DC Electrical Distribution System (EDC125, EDC250)	0.0	N/A	18.0	0.0%	96.0	1.0%	0.0	N/A
EDG01	Electrical Distribution System - EMER DIESEL GEN	0.0	N/A	27.0	120.4%	36.0	73.6%	0.0	N/A
EL4215	Electrical - ESSENTIAL PC 215 (Merged into EL Curriculum)	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
ETG06	Generator - UNIT 2 GEN EXITCIT/AVR/SYNC	0.0	N/A	27.0	207.4%	192.0	53.2%	0.0	N/A
EUPS01	Electrical Distribution System - 120VAC UPS	0.0	N/A	9.0	11.1%	36.0	5.6%	0.0	N/A
FP01	Fire Protection Water	18.0	197.2%	63.0	126.2%	108.0	58.3%	0.0	N/A
FW02	Feedwater System FW01, FW02, FW03, FW04	0.0	N/A	270.0	43.6%	588.0	90.4%	0.0	N/A
FW06	Cycle Chem Feed	0.0	N/A	9.0	44.4%	36.0	22.2%	90.0	12.2%
FW07	Condensate System	0.0	N/A	126.0	126.2%	288.0	432.1%	90.0	2.8%

# Iatan Station Unit 2 Pre-Startup Training Report

(May 15, 2010)

FW08	Demineralized Water System	0.0	N/A	72.0	11.1%	192.0	15.9%	135.0	63.0%
FW09	Polisher Neutralization TK, forwarding PMPs, Polishers	0.0	N/A	18.0	22.2%	36.0	75.0%	165.0	141.8%
FW12	Condensate Makeup System	0.0	N/A	18.0	166.7%	48.0	76.0%	30.0	0.0%
IN01	Sample Analyst	0.0	N/A	0.0	N/A	12.0	0.0%	150.0	34.7%
PM02	Compressed Gas - Nitrogen	0.0	N/A	18.0	33.3%	24.0	66.7%	0.0	N/A
PS06	Aux Steam	0.0	N/A	54.0	127.8%	168.0	35.1%	0.0	N/A
SG05	Flash Tank Drain System	0.0	N/A	9.0	194.4%	60.0	84.2%	0.0	N/A
SG08	Air Preheat Steam	0.0	N/A	18.0	158.3%	72.0	25.0%	0.0	N/A
SG10	Fuel Oil	27.0	55.6%	27.0	229.6%	84.0	163.1%	0.0	N/A
SG13	Steam (Main, HRH, CRH)	0.0	N/A	54.0	69.4%	120.0	102.7%	0.0	N/A
TE01	Heater Drains and Extraction Steam (TE01, TE03, TE04, TE05)	0.0	N/A	180.0	43.3%	372.0	20.4%	0.0	N/A
TG01	Toshiba ST (TG01, TG08)	0.0	N/A	522.0	37.3%	1296.0	55.6%	0.0	N/A
TG03	Gland Steam System (and ST Drains)	0.0	N/A	18.0	250.0%	72.0	135.1%	0.0	N/A
TG04	Turbine L.O.	0.0	N/A	45.0	155.6%	108.0	73.1%	0.0	N/A
TG05	Toshiba Turbine Controls	0.0	N/A	27.0	N/A	168.0	219.6%	0.0	N/A
WC01	SFC Conveyor -Bottom Ash	63.0	136.5%	63.0	N/A	96.0	41.7%	0.0	N/A
WC02	Pyrites System	45.0	4.4%	45.0	23.3%	60.0	103.3%	0.0	N/A
WC03	Dry Flight Conveyor	45.0	2.2%	45.0	8.9%	72.0	60.1%	0.0	N/A
WC04	Fly Ash Silo	72.0	87.5%	90.0	56.7%	120.0	42.5%	0.0	N/A
WC10	Waste Water Treatment	0.0	N/A	0.0	N/A	96.0	78.1%	840.0	N/A
WS02	Raw Water System	108.0	40.3%	108.0	N/A	288.0	39.6%	960.0	66.8%
WS03	Service Water System	27.0	161.1%	27.0	190.7%	60.0	45.8%	75.0	9.3%
WS04	Potable Water System	9.0	111.1%	9.0	77.8%	12.0	66.7%	15.0	0.0%
ALSTOM	Boiler Steam and Water CS, BW, BS, BR, SC, SY	9.0	2388.9%	306.0	88.9%	756.0	84.7%	0.0	N/A
ALSTOM	Boiler Air and Gas WBX, OFA, GD, PA, SA	9.0	1011.1%	306.0	40.7%	480.0	56.9%	0.0	N/A
ALSTOM	FANS - PA, FD, ID Fans (PFN, PFS, FDN, FDS, SG04)	171.0	63.2%	171.0	108.2%	348.0	62.5%	0.0	N/A
ALSTOM	Fuel Firing System PLO, CF, PZ, SL, CP	72.0	142.4%	189.0	114.3%	480.0	90.3%	0.0	N/A
AH-A	Air Heater System	0.0	N/A	36.0	144.4%	84.0	53.0%	0.0	N/A
AA	Atomizing Air	0.0	N/A	13.5	0.0%	24.0	6.3%	0.0	N/A
SCA	SCAH System (Steam Coil Air Heater)	0.0	NA	13.5	66.7%	42.0	64.3%	0.0	N/A
	Absorber Support Systems CC05, CC06, CC07, CC09, CC10, CC12, CC13	252.0	92.9%	126.0	106.0%	252.0	82.3%	0.0	N/A
MI	Steam Inerting System	9.0	127.8%	22.5	77.8%	90.0	55.0%	0.0	N/A

# Iatan Station Unit 2 Pre-Startup Training Report

(May 15, 2010)

CC11	Powdered Activated Carbon Injection System	0.0	N/A	54.0	11.1%	84.0	20.2%	0.0	N/A
IF	Ignitor & Flame Scanner Pkg	0.0	N/A	22.5	286.7%	126.0	104.4%	0.0	N/A
CA03	Fabric Filter Compressed Air	31.5	4.8%	31.5	11.1%	36.0	30.6%	0.0	N/A
CC03	Fabric Filter	40.5	22.2%	40.5	64.2%	78.0	47.4%	0.0	N/A
DG	Deluge Water System	18.0	11.1%	22.5	4.4%	42.0	0.0%	0.0	N/A
SN	Scanner Air System	0.0	N/A	9.0	122.2%	24.0	111.5%	0.0	N/A
SB	Sootblower System	0.0	N/A	45.0	84.4%	156.0	42.9%	0.0	N/A
WCS	Water Cannon System	0.0	N/A	10.8	83.3%	14.4	76.4%	0.0	N/A
	SCR System (SCR, SH, 2CC15)	4.5	511.1%	13.5	185.2%	90.0	63.3%	0.0	N/A

## NOTES:

1. Plant Equipment Attendant (PEA) percent complete data will continue to exceed 100% as they receive PEO level systems training.
2. Control Operator (CO) percent complete data will continue to exceed 100%.
3. Systems training originally projected for February 2010 will be conducted after steam blows, therefore our projected progress has shifted. This shift does not currently impact the overall completion target of August 1, 2010.

## Critical Calculation Variables:

**Total number of Operators to be trained: 45**

### Breakdown:

PEA: 9  
PEO: 9  
CO: 12  
PA: 15