

Scanned and excerpted from the April 2011 Report of the Construction Supervisor for the Nationwide Electrical Power Grid and Power Plant and its Facilities by La'o Hamutuk
 For more information on this project, see <http://www.laohamutuk.org/Oil/Power/10PowerPlant.htm>

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 ELECTROCONSULT & BONIFICA S.p.A. JOINT VENTURE

GOVERNMENT OF THE DEMOCRATIC REPUBLIC OF TIMOR LESTE

Contract RDTL – 92896 Construction Supervision Services
 of the Nationwide Electrical Power Grid and
 Power Plant and its Facilities

Monthly Progress Report
April 2011

Rev.	Date	Myrna Sacramento Author	Zoltan Lakacs Checked	Felice Maffei Approved
Project: Construction Supervision Services for Building of the National Electrical Power System for the Timor-Leste				
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PROJECT REPORT

EXECUTIVE SUMMARY

(pages 8-16 in original report)

For the Month of APRIL 2011

Project : CONSTRUCTION SUPERVISION SERVICES OF THE NATIONWIDE ELECTRICAL POWER GRID and POWER PLANTS and Its FACILITIES

The weather conditions during the month of April were not favorable for the execution of civil works especially along the transmission lines area. However the problem of the rain does not absolve the Contractor from the poor quality of the workmanship.

The total progress achieved at the end of April 2011 by CNI22 in the Power Grid is 29.22 % against the planned 49.70%

A) CNI22 – Power Grid (150 KV Transmission Lines , Substations and 20KV distribution lines)

The total manpower deployed by the Contractor on the project during the month of April in order to speed up with the progress and to recover some of the delay was 470 Chinese and 960 Timorese . Unfortunately the weather conditions during the month, in particular along some sections of the transmission lines , were still unfavorable . Hauling of the materials for concrete works and of the steel structures for towers erection was rather difficult due to the access roads disrupted by the torrential rain .

Nevertheless the Contractor put his best effort and some positive results were achieved in term of progress although not up to the level expected .

Obstacles created by Land Owners still persisted along the transmission line Dili-Liquica in particular in Becora area near Dili substation. Land Owners are stubborn and are chasing away brutally the Contractor taking its tools and equipment.

The intervention of the VETERANS to solve such problems did not obtained up to now any positive results. The intervention of the Authorities with strong determination is highly sought to solve this problem once and for all , otherwise Dili Substation shall not be connected to Hera power Plant and to Liquica Substation on due time . This problem is now dragging on more than six months.

The total progress achieved at the end of April 2011 by CNI22 in the Power Grid at site is 37.58 % against the planned 59.66 % (if it is taken in consideration the materials and equipments manufactured in China and ready for shipment the overall progress achieved is about 45 %) .

The gap of 20-22 points between the planned progress and the actual progress remained more or less constant like in previous months , Hopefully with the beginning of the dry season the Contractor will try to recover and to reduce this gap.

One important event of the month of April 2011 is the visit to Dili Substation on 15th by H.E. the President of RDTL Dr. Ramos Horta ,

The progress of the works in the Power Grid done by CNI22 during the month of April 2011 can be summarized as follow :

Dili Substation;

- Assembly of the two 31.5 MVA Power Transformers is in progress.
- Installation of the Steel Supporting Structures in 150KV area is completed.

- Installation of the 150KV Disconnecting Switches is in progress.
- Installation of Water Sewage system is in progress.
- Construction of the permanent fence bricks wall is almost completed .
- Piping installation for the Firefighting System is substantially completed.
- The Grounding Network installation is 95 %completed.
- Pump House Building – Installation of piping system connecting the water reservoir and the mechanical works is completed .
- 20 KV building – Finishing work and walls painting inside the building is in progress in the roof slab insulation materials have been applied.
- Main Control Building – Finishing work and walls painting inside the building is in progress . In the roof slab insulation material have been applied.

The overall accomplishment of Dili Substation for civil works is now 89% and the plan to complete all by June 2011 remains the target of the Contractor, but in accordance to the present situation it may not be achieved.

Manatuto Substation

- Construction of the Permanent bricks wall fence is 70% completed with plastering to both side done .
- 150 KV area – Erection of the Steel Structures is 90% completed including the support foundations; cable trench is now in-progress and 70% completed .
- Main Control Building – Plastering of the interior bricks walls is done , the ground floor concrete slab is done .
- 20 KV building – The bricks walls have been done .

Viqueque Substation

- Only the site leveling has been done , the new subcontractor arrived from China and started to install all temporary facilities including living quarter .

Liquica Substation

- Construction of the stone retaining wall in the south part is progressing and 30 % is done.
- Main Transformer Foundation – substantially completed including the emergency oil pit.
- 150KV area – All the foundations for the steel structures have been completed .
- Main Control Building – Concrete structures including roof slab have been done.
- 20 KV Building – Concrete structures including roof slab have been done

Baucau Substation

- The foundation of the main transformer is done.
- The foundation of the main control building has been excavated and lean concrete placed.
- The foundation of the 20KV building has been excavated and the lean concrete placed.

Lospalos Substation

- The foundation of the main transformer is done.
- The foundation work of the main control building is in progress with reinforcing steel installation.
- The foundation work of the 20 KV building is in progress with reinforcing steel installation.
- In the 150KV area , foundations for the steel structures 4 units are in progress.

Maliana Substation

- The activity of site leveling and embankment compaction is in progress.

Suai Substation

- No activity . Land owners are still waiting for compensation of the trees to be cut . This

situation pending for long time will cause a delay of several months in the completion of the substation.

Cassa Substation

- The activity of the site leveling and embankment compaction is in progress

Hera Power Plant (Part of CNI22 Competence)

The construction of the Oil Tanks by CNI22 is on-going with the progress achieved as follow:

- One (1) 5,000 M3 tank is completed and filling with water for the hydraulic test has started .
- One (1) 5,000 M3 tank is completed assembled and welded , installation of inlet pipes is in progress.
- One (1) 5,000 M3 tank , erection is in progress up to the fifth ring wall (eight in total)
- Three (3) 1,000 M3 tanks , erection is in progress up to the fourth ring wall (seven in total).
- Two (2) 300 M3 tanks , have the roof (Dome) completed and with the lifting device placed in position .

150 KV Transmission Lines>

- **Hera – Dili : Total number of Double Circuit Towers** **30 units** (9.89 Km)
 - Total number of Tower Foundations Excavated 30
 - Total number of Tower Foundations Concreted 30
 - Total number of Towers Erected 30
 - Total number of Towers- Stringing of Conductors 27
- **Hera – Manatuto : Total number of Double Circuit Towers** **91 units** (40.83 Km)
 - Total number of Tower Foundations Excavated 88
 - Total number of Tower Foundations Concreted 87
 - Total number of Towers Erected 81
 - Total number of Towers- Stringing of Conductors 27
- **Manatuto – Baucau : Total number of Single Circuit Tower** **132 units** (51.87 Km)
 - Total number of Tower Foundations Excavated 125
 - Total number of Tower Foundations Concreted 120
 - Total number of Towers Erected 116
- **Baucau – Lospalos : Total number of single circuit tower** **118 units** (53.280 Km)
 - Total number of Tower Foundations Excavated 83
 - Total number of Tower Foundations Concreted 62
 - Total number of Towers Erected 12
- **Baucau – Viqueque :Total number of single circuit tower** **96 units** (38.57Km)
 - Total number of Tower Foundations Excavated 52
 - Total number of Tower Foundations Concreted 45
 - Total number of Tower Erected 26
- **Dili – Liquica : Total number of single circuit tower** **87 units** (38.81 Km)
 - Total number of Tower Foundations Excavated 79
 - Total number of Tower Foundations Concreted 72
 - Total number of tower Erected 64
- **Liquica — Maliana : Total number of single circuit tower** **103 units**
(63.00 Km provisional)
 - Total number of Tower Foundations Excavated 14
 - Total number of Tower Foundations Concreted 6
 - Total number of Tower Erected -
- **Maliana — Suai : Total number of single circuit tower** **67 units**
(26.00 Km provisional)
 - Field survey completed.

➤ Suai — Cassa : Total number of single circuit tower	203 units
(81.00 Km provisional)	
Field survey and soil investigation are completed.	103 units
➤ Cassa — Betano : Total number of single circuit tower	80 units
(24.00 Km provisional)	
Field survey has been completed except the last 2 KM near Betano power plant , waiting for the final position of the switchyard.	
➤ Betano — Viqueque : Total number of single circuit tower	190 units
(81.52 Km provisional)	
Total number of Tower Foundations Excavated	7
Total number of Tower Foundations Concreted	-
Total number of Tower Erected	-
➤ Viqueque — Lospalos : Total number of single circuit tower	223 units
(99.70 Km provisional)	
Total number of Tower Foundations Excavated	5
Total number of Tower Foundations Concreted	-
Total number of Tower Erected	-

20 KV Distribution Lines

- > **Dili – Aileu – Gleno (KM 60.10)**
This line will start from Dili substation (Becora) until Selo with double circuit , and from Selo one circuit goes to Aileu and one circuit goes to Gleno.
The land survey has been done and relevant drawings issued.
Excavation for the installation of the poles is in progress.
Procurement of material is in progress.
- > **Betano – Same (KM 26.20)**
The land survey has been done and relevant drawings issued.
- **Cassa – Ainaro (Km 23.60)**
The land survey has been done and relevant drawings issued.
- > **Comoro – Dili substation (Becora) (Km 9.45)**
The land survey has been done and relevant drawings issued.

B) Puri Akraya Engineering Limited – Power Plants in Hera and Betano. Contract No. RDTL 10004115 .

The activities on site are proceeding speedily , the manpower deployed consists of 160 units (80 expatriates and 80 Timorese) , the work done is the following:

- Three concrete piles have been driven up to 30 meters deep for PDA test
- Base course of internal roads is 90% completed.
- Filling and compaction of lay down area is 80% completed .
- Soil improvement and consolidation of un-piled foundations 80% completed
- Concreting of un-piled foundations is done for blackstart and heat recovery equipments , for fire fighting/water tank equipment and for boiler washing tank.
- Construction of boundary wall is 50% completed.

The (2nd) shipment with piles, piling machines , earthing cables , rebars arrived to Hera Naval Base , unloading procedures and transportation to Hera site went all smoothly.

Drawings for Civil Works have been all submitted to the Consultant , reviewed and approved for construction.

Drawings of Mechanical Works and Electrical Works are in advanced stage of preparation

Manufacturer of the Generating Sets (Wartsila Finland) is proceeding very fast. Engines Factory Acceptance Test (FAT) for 2 units done in March and for 2 units done in April 4 in Trieste Italy.

Generators Factory Acceptance Test (FAT) for 4 units done in March and for 3 units done in April in Helsinki Finland.

All the tests done were witnessed by Owner representatives , Consultant's representative as well as a third independent inspection company.

At the end of the month of April four (4) complete Generating Sets are ready to be packed for shipment .

Other Milestone achieved by PAE during the month of April :

- Disbursement done by the Owner on April 07,2011 of the Advance Payment for Betano power Plant in the amount of US \$ 48,142,280 against the submitted Bank Guarantee .
- Supplemental Agreement for Hera and Betano has been signed by H.E. the Prime Minister on 14 April 2011.
- Letter of Credit through ANZ Bank/HSBC Singapore covering the Hera Power Plant has been issued on 21 April 2011.

C) CSI Company,Lda of Timor Leste (China Shandong International) - 24 MW Extension of Comoro Power Plant , Contac No. RDTL 100053 .

The Contractor completed the mobilization on site and started works on the Power Plant, the manpower present on the project consists of 34 Chinese and 35 Timorese.

The work done is the following:

- Excavation of the main building foundations done.
- Soil Penetration Tests at the bottom of the excavated foundation done.
- Lean concrete at the bottom of the foundation placed.
- Reinforcing steel of the bottom slab installed.
- Concreting of the first section of the bottom slab done.
- Fabrication of reinforcing steel for columns and beams is progressing. The performance of the contractor shown up to now is satisfactory .

As far as the financial aspect of the contract CSI has not made any request for the 10% advance payment equal to US \$ 3,090,000.00.

The Contractor has opted for direct invoicing the monthly progress of works done.

The first invoices submitted covering the works done up to end of April 2011 is in the amount of US \$ 1,459,630.00 equal to 4/2 % of the contract price (Fixed Amount of US \$ 30,900,000.00).

(pages 17-41 in original)

Contract RDTL - 812931

**Construction of nation-wide electrical power grid and power plants and its facilities project
of the Democratic republic of Timor Leste**

MINUTE of MEETING

Location : HERA – CNI22 Office

Date : April 15 , 2011

Participants :

EDTL

Mr. Roberto Manuel Marcal (EDTL Project Manager).
Mr. Frederico dos reis da Silva (Power Plant Engineer).
Mr. Francisco Soares Pica (Substations Engineer).Not attending
Mr. Domingo dos Reis (Substation Engineer). Not attending
Mr. Gilberto Siguera (Transmission lines Engineer). Not attending
Mr. Jaime Camacho (Power Plant Engineer). Not attending
Mr. Bento Xavier (Power Plant Engineer). Not attending
Mr. Alexander de Jesus (Substations Engineer).
Mr. Ezequil Pinto (Transmission Line Engineer).
Mr. Delfin Dos Santos (Power Plant Engineer). Not attending
Mr. Julio Dos Santos (Substation Engineer). Not attending

CONSULTANT

Mr. Felice Maffei (Project Manager).
Mr. Virgilio Rivera (Civil Engineer) .Not attending
Mr. Joko Siswadi (Electrical Engineer for transmission line).
Mr. Zoltan Lukacsi (QA/QC Engineer).
Mr. Veton Shaipi (Electrical Engineer) .
Mr. Napoleon Villanueva (Civil Engineer for Substations).
Mr. Jaime Osvaldo Munoz (Electrical Engineer)
Mr. Francisco Pedigral (Safety Engineer)
Mr. Giampaolo Pilia (Electrical Engineer)

CONTRACTOR CNI22

Mr. Li Tao (Project Manager) .
Mr. Wu Yong Jun (Chief Engineer).
Mr. Hung Kaifu (chief engineer for Hera power plant)
Mr. Zhang Ming Cun (Substation Manager).
Mr. Zhang Ming Ping (Transmission Line Manager). Not attending
Mr. Zhang Yaping (Hera power plant Engineer)
Mr. Zhou Zhong Qi (Dili Substation Engineer) . Not attending
Mr. Peng Liwei (Interpreter).
Mr. Liu Jie (Electrical Engineer).
Mr. Jiang Pei Yun (Transmission Lines Dep. Manager)
Mr. Xiao Yali (Transmission line Engineer) . Not attending
Mr. Peng Li Xian (Transmission Line Engineer).Not attending
Mr. Jiang Yan (Transmission Line Engineer).Not attending
Mr_ Li Dawei (Transmission Line engineer). Not attending
Mr. Zhu Ling (Designer). Not attending
Mr. Zhang Qin Ghail (Transmission Line Engineer)
Mr. Wu Jun (Transmission line supervisor)
Mr. Liu Jian Puo (Safety Engineer).
Mr. Leo (Interpreter).

Subject of the meeting : Coordination of the works

Agenda of the present meeting :

- 1) Comments on the last minute of meeting dated March 31 , 2011.
- 2) Progress of works.
- 3) Delivery status of materials and equipment.
- 4) Drawings and technical specifications.
- 5) Insurance policy
- 6) Payment
- 7) Environment
- 8) Questions

The Consultant started the meeting with the comment on the visit made in the morning at 9 . a.m. in Dili Substation by the President of DRTL , H.E. Jose Ramos Horta

Consultant advised the Contractor to expect from now on more Visits on the project by high rank Political People , the project is now entering a crucial phase with only 7 months left to the completion date and therefore members of the Government want to ascertain directly that the progress is satisfactory.

The situation seems to be not very easy , the quantity of works remaining to be done is too much in particular the civil works of the substations.

The Contractor is reiterating its confidence that the northern part of the Power Grid from Liquica up to Los Palos will be completed on time , during the month of May all major civil works in Baucau and Lospalos substations will be completed including the main control building and the 20 KV building .

Electrical equipments will arrive from China within May and June and installation will proceed immediately after.

Consultant stated that full collaboration will be given to obtain the positive result , but a detailed construction program is needed in order to monitor on daily basis the situation.

1) Comments on the last minute of meeting dated March 31 2011

No comments from Contractor

No comments from EDTL.

No comments from the present.

Everybody present in the meeting are reminded that <the no comments> it means full approval of the contents of the minute of the previous meeting.

2) Progress of the works

Transmission lines .

The overall situation is summarized in the following table:

Section	excavation	concrete	Tower erection	Stringing conductors	Total number	KM
Hera-Dili	30	30	30	27	30	9.89
Hera-Manatuto	87	86	81	15	91	40.83
Manatuto-Baucau	125	118	115	--	132	51.87
Baucau-Iospalos	74	48	--	--	118	53.28
Dili-Liquica	76	72	64	--	87	38.81
North Coast Total	392	354	290	42	458	194.68
Baucau-Viqueque	48	45	11	--	96	38.57
Liquica-Maliana	4	2	--	--	103 provisional	36.11
Maliana-Suai	--	--	--	--	67 provisional	26.00
East-West Total	52	47	11		266 provisional	100.68
Suai Cassa	--	--	--	--	203 provisional	81.00
Cassa-Betano	--	--	--	--	80 provisional	24.00
Betano-Viqueque	3	--	--	--	190 provisional	81.52
Viqueque-Los Palos	4	--	--	--	223 provisional	99.70
South Coast Total	7	--	--	--	696 provisional	286.22
TOTAL	451	401	301	42	1420 provisional	581.58 provis.
This Period of 15 days	28	19	8	4		

From March 31 to April 15, 2011 (15 days), the production remain low: 1.8 excavation per day, 1.3 concrete foundation per day, 0.5 tower erected per day, 0.26 tower of stringing of conductors per day.

The positive aspect of the situation is the quality of the workmanship which has improved considerably.

HERA – DILI (9.890 KM - No. 30 towers)

Situation unchanged , stringing of the conductors on towers 1-2-3 and 29-30 up to the gantry of Dili substation remains to be done .

The Contractor stated that stringing of conductors on towers 29 - 30 up to the gantry of Dili substation will be done simultaneously when towers 1 – 2 – 3 - 4 of Dili Liquica will be ready in order to minimize the problems with the local land owners.

DILI – LIQUICA (38.81 KM – 87 towers)

In this section is as follow :

- Foundations 1 has been relocated , but the land owner does not allow access.
- Tower 2 has been erected.
- Foundation 3 has been excavated , but no access to transport concrete material.

- Foundation 4 has to be excavated , but no access is permitted to transport material .
- Foundation 25 has been concreted , but no access is permitted by the land Owner to transport the steel structures.
- Foundations 28 excavation is in progress , but no access allowed by land Owner to transport the materials.
- Foundation 77 is located to close to the edge of the river bank and risk of erosion is there , it is required to study the possibility of relocation. The Contractor will submit a solution to this problem.

In this section of line the excavation work is completed in 76 towers foundations (about 87% of the total) .

The concrete is done in 72 towers foundations (about 82% of the total)

Tower erected 64 (about 73% of the total).

HERA - MANATUTO (40.83 Km -91 towers)

The excavation work is completed in 87 tower foundations (about 95% of the total) . The concrete is done in 86 tower foundations (about 94% of the total)

Towers erected are 81 (about 89% of the total)

The stringing of the conductors is done in 15 towers (about 16% of the total).

MANATUTO – BAUCAU (51.87 Km -132 towers)

The excavation works is completed in 125 tower foundations (about 94% of the total) . The concrete is done in 118 tower foundations (about 89% of the total) .

Towers erected remain 115 (about 87% of the total).

The Contractor is now doing access road to towers No. 45-46-47-48 in order to transport materials. Stringing of conductors on this line will start at end of April

BAUCAU – LOS PALOS (53.28 KM – 118 towers)

The excavation work is completed in 74 tower foundations (about 62 % of the total) and is in progress in 7 . The concrete has been done in 48 tower foundations (about 41 % of the total).

The Contractor stated that the erection of the towers is postponed at end of April .

BAUCAU – VIQUEQUE (38.56 KM – 96 towers)

The excavation works is done in 48 tower foundations (about 50 % of the total) and is progressing on 18 foundations. The concrete has been done in 45 tower foundations (about 47% of the total).

Towers erected are 11 (about 11% of the total) .

LIQUICA – MALIANA (63 KM –103 towers)

Work done by the Indonesian Company THEATE .

Excavation completed is done in 4 tower foundations (about 3.8% of the total).

The concrete has been done in 2 tower foundations (about 1.9%of the total).

The Contractor is still building up the site organization.

MALIANA – SUAI

The field survey work of the remaining 27 Km (about) is in progress .

SUAI- CASSA

No activity is reported. .

CASSA- BETANO

Field survey of the remaining 25 Km is in progress .

BETANO - VIQUEQUE

The excavation work is done in 3 foundations and is in progress in 2 .

VIQUEQUE – LOSPALOS (99.70 KM - 223 towers)

The excavation works is done in 4 foundations and is in progress in 6 foundations .

Substations

DILI SUBSTATION

The quantity of the finishing works remaining to be done is still a lot mainly in the two buildings .
The Consultant is requesting that additional manpower be used .

- The fencing bricks wall in the east side is in progress.
- In the roof of the 20KV building water-proof and insulation works are in progress
- The grounding installation is 90% completed.
- Installation of the steel supporting structures is completed.
- Installation of overhead cables in the 150KV area is 95% completed .
- Installation of the water piping system and hydrant along the internal roads of the substation is in progress.

MANATUTO SUBSTATION

Civil works is progressing , but it will be required a minimum of two-three months to have it completed .

In the main control building and 20 KV building all internal finishing work is now being done .
Erection of 150 KV steel structures is in progress and 50% can be considered completed .

BAUCAU SUBSTATION

The foundation of the main transformer is in progress

The excavation of foundation of the Main control building is done and lean concrete placed .

The excavation of foundation of the 20KV building is in progress.

LOS PALOS SUBSTATION

Construction of the fence wall is in progress .

The excavation of foundation of the Main control building is done and lean concrete placed.

The excavation of the foundation of the 20KV building is done and concrete placed.

The excavation of the foundations in the area 150KV is done and lean concrete placed.

The excavation of the foundation of the main transformer is done and lean concrete placed.

LIQUICA SUBSTATION

Construction of the stone retaining wall in the south part is in progress.

In the main control building the concrete structure of the roof is in progress .

In the 20 KV building the concrete structure from ground up to the roof is in progress.

Concrete foundations for the supporting steel structures are in progress.

MALIANA SUBSTATION

The activity of site levelling and embankment compaction is in progress , rain is causing an obstacle to this work

SUAI SUBSTATION

No activity. Land owners are still waiting for compensation.

CASSA SUBSTATION

The activity of site levelling and compaction of the embankment is in progress , rain is causing an obstacle to this work .

Permanent access road to the substation may require that compensation be paid to the land owners.

VIQUEQUE SUBSTATION

After the site levelling no activity is reported in this period.

Hera Power Plant

The construction of the Oil Tanks is proceeding with almost one month delay on the program .The achievement is the following:

- Two tanks of 5000 M3 are totally assembled , welding is well in progress.
- One tank of 5000 M3 the assembly reached the third ring wall .
- Two tanks of 1000 M3 the assembly reached the first ring wall.
- One tank of 1000 M3 is with the roof (dome) done .
- Two tanks of 300 M3 are with the roof (dome) done.

The Contractor stated that although there is a month of delay in the program , by mid of June the construction of the 8 tanks will be completed including the hydraulic test .

CNI22 will undertake the execution of the Grounding system inside the Oil Tanks Area , and for the drainage of the oily water a proper solution has to be sought.

Betano Power Plant

No activity

3) Delivery of Material and Equipment

The delivery schedule attached to the weekly report is taken in consideration as basic information on the status of the material and equipment although for many items what is described is not reflecting the reality .

4) Drawings and technical specifications

Situation of sending back and forth revised drawings continue as usually , Sichuan Electrical Power Design Institute continue to show low attention in this project .

5) Insurance

Situation is unchanged .

6) Payments

The payment related to the interim payment certificates No.10 for the month of December 2010 and No.11 for the month of January 2011, is now being processed (like payments of all other contractors) by the newly established office in the Ministry of Finance , disbursement is expected to be done in the next few days.

The interim payment certificate No. 12 for the month of February 2011, is in process.

7) Environment & Safety

The Contractor is reorganizing its internal structures to take care of the issue more seriously

8) Question

- Consultant Safety Engineer requested from the Contractor a full and detailed report of the fatal road accident near Baucau where a truck transporting construction material knocked down a pedestrian .

The present meeting started at 15:15 and ended at 18:15 .

Next meeting is scheduled for Friday April 29 , 2011 at 14:30 in Hera.

Contract RDTL - 812931

Construction of nation-wide electrical power grid and power plants and its facilities project of the Democratic republic of Timor Leste

MINUTE of MEETING

Location : HERA – CNI22 Office

Date : April 29 , 2011

Participants :

EDTL

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Mr. Frederico dos reis da Silva (Power Plant Engineer). Not attending
Mr. Francisco Soares Pica (Substations Engineer).Not attending
Mr. Domingo dos Reis (Substation Engineer). Not attending
Mr. Gilberto Siguera (Transmission lines Engineer). Not attending
Mr. Jaime Camacho (Power Plant Engineer). Not attending
Mr. Bento Xavier (Power Plant Engineer). Not attending
Mr. Alexander de Jesus (Substations Engineer).Not attending
Mr. Ezequil Pinto (Transmission Line Engineer).Not attending
Mr. Delfin Dos Santos (Power Plant Engineer). Not attending
Mr. Julio Dos Santos (Substation Engineer).Not attending

CONSULTANT

Mr. Felice Maffei (Project Manager).
Mr. Virgilio Rivera (Civil Engineer) .
Mr. Joko Siswadi (Electrical Engineer for transmission line).
Mr. Zoltan Lukacsi (QA/QC Engineer).
Mr. Veton Shaipi (Electrical Engineer) .
Mr. Napoleon Villanueva (Civil Engineer for Substations). Not attending
Mr. Jaime Osvaldo Munoz (Electrical Engineer)
Mr. Francisco Pedigral (Safety Engineer)
Mr. Giampaolo Pilia (Electrical Engineer)

CONTRACTOR CNI22

Mr. Li Tao (Project Manager) .Not attending
Mr. Wu Yong Jun (Chief Engineer).
Mr. Hung Kaifu (chief engineer for Hera power plant) .
Mr. Zhang Ming Cun (Substation Manager).Not attending
Mr. Zhang Ming Ping (Transmission Line Manager). Not attending
Mr. Zhang Yaping (Hera power plant Engineer).Not attending
Mr. Zhou Zhong Qi (Dili Substation Engineer) . Not attending
Mr. Peng Liwei (Interpreter). Not attending
Mr. Liu Jie (Electrical Engineer).
Mr. Jiang Pei Yun (Transmission Lines Dep. Manager).
Mr. Xiao Yali (Transmission line Engineer) . Not attending
Mr. Peng Li Xian (Transmission Line Engineer).Not attending
Mr. Jiang Yan (Transmission Line Engineer).Not attending
Mr. Li Dawei (Transmission Line engineer). Not attending
Mr. Zhu (Oil Tanks Engineer).
Mr. Zhang Qin Ghail (Transmission Line Engineer) .
Mr. Wu Jun (Transmission line supervisor)
Mr. Liu Jian Puo (Safety Engineer).Not attending
Mrs. Dina (Interpreter).

Subject of the meeting : Coordination of the works

Agenda of the present meeting :

- 1) Comments on the last minute of meeting dated April 15, 2011.
- 2) Progress of works.
- 3) Delivery status of materials and equipment.
- 4) Drawings and technical specifications.
- 5) Insurance policy
- 6) Payment
- 7) Environment
- 8) Questions

The Consultant began the meeting with some general comments :

- First of all the Contractor is once again requested to submit the request for the towers inspection, prior to the conductors stringing , only if it is sure that the towers are totally erected without missing parts. The photographic report of the last inspection shows very clear that towers cannot be certified as ready for stringing , many important major pieces are missing
- Secondly the inspection must be carried out jointly : Consultant , Contractor and EDTL , the Contractor should deploy at least 4 persons climbing the tower simultaneously one each corner
- The stringing of the conductors done by the second team is not at all satisfactory in terms of quality of the workmanship , workers are not professional ones and if the quality will not improve the Consultant will ask for replacement.
- Once again the Contractor is advised that the concrete caps on the foundations cannot be done if the anchor bolts are not tightened with a torque wrench and consequently foundations shall not be paid 100%.

1) Comments on the last minute of meeting dated April 15 2011

No comments from Contractor

EDTL not present.

No comments from the others.

Everybody present in the meeting are reminded that <the no comments> it means full approval of the contents of the minute of the previous meeting.

2) Progress of the works

Transmission lines .

The overall situation is summarized in the following table:

Section	excavation	concrete	Tower erection	Stringing conductors	Total number	KM
Hera-Dili	30	30	30	27	30	9.89
Hera-Manatuto	88	87	81	27	91	40.83
Manatuto-Baucau	125	120	116	–	132	51.87
Baucau-Iospalos	83	62	–	--	118	53.28
Dili-Liquica	79	72	64	--	87	38.81
North Coast Total	405	371	303	54	458	194.68
Baucau-Viqueque	52	45	26	--	96	38.57
Liquica-Maliana	14	6	–	–	103 provisional	36.11
Maliana-Suai	--	--	--	--	67 provisional	26.00
East-West Total	66	51	26		266 provisional	100.68
Suai Cassa	–	–	–	–	203 provisional	81.00
Cassa-Betano	–	–	–	–	80 provisional	24.00
Betano-Viqueque	7	--	--	–	190 provisional	81.52
Viqueque-Los Palos	5	--	--	--	223 provisional	99.70
South Coast Total	12	--	--	--	696 provisional	286.22
TOTAL	483	422	329	54	1420 provisional	581.58 provis.
This Period of 15 days	32	21	35	12		

From April 15, 2011 to April 29, 2011 (15 days) , the production done remains very low: 2.1 excavations per day , 1.4 concrete foundations per day , 2.3 towers erected per day, 0,8 tower of stringing of conductors per day.

The Contractor justified the low production of this period by the continuous heavy rain which disrupted access roads and prevented transportation of materials at site..

HERA – DILI (9.890 KM - No. 30 towers)

Situation unchanged , stringing of the conductors on towers 1-2-3 and 29-30 up to the gantry of Dili substation remains to be done .

The Contractor stated that stringing of conductors on towers 29 - 30 up to the gantry of Dili substation will be done simultaneously when towers 1 – 2 – 3 - 4 of Dili Liquica will be ready in order to minimize the problems with the local land owners.

DILI – LIQUICA (38.81 KM – 87 towers)

Situation in this section is as follow , almost unchanged:

- Foundations 1 has been relocated , but the land owner does not allow access.
- Tower 2 has been erected.
- Foundation 3 has been excavated , but no access to transport concrete material.
- Foundation 4 has to be excavated , but no access is permitted to transport material .

- Foundation 25 has been concreted , but no access is permitted by the land Owner to transport the steel structures.
- Foundations 28 excavation is in progress , but no access allowed by land Owner to transport the materials.
- Foundation 77 has been relocated away from the edge of the river bank in order to avoid the risk of erosion and the new position is approved.

In this section of line the excavation work is completed in 79 towers foundations (about 90% of the total) .

The concrete is done in 72 towers foundations (about 82% of the total)

Tower erected 64 (about 73% of the total).

HERA - MANATUTO (40.83 Km -91 towers)

The excavation work is completed in 88 tower foundations (about 96% of the total) . The concrete is done in 87 tower foundations (about 95% of the total)

Towers erected are 81 (about 89% of the total)

The stringing of the conductors is carried out by two teams and totally is done in 27 towers (about 29% of the total).

MANATUTO – BAUCAU (51.87 Km -132 towers)

The excavation works is completed in 125 tower foundations (about 94% of the total) . The concrete is done in 120 tower foundations (about 91% of the total) .

Towers erected are 116 (about 88% of the total).

The Contractor stated that stringing of conductors on this line will start with a third team as from next week.

BAUCAU – LOS PALOS (53.28 KM – 118 towers)

The excavation work is completed in 83 tower foundations (about 70 % of the total) and is in progress in 3.

The concrete has been done in 62 tower foundations (about 52 % of the total).

Towers erected are 12 (about 10% of the total).

One of the main problem encountered along this section is the disruption by heavy rain of the roads and consequently making difficult the transportation of the materials.

BAUCAU – VIQUEQUE (38.56 KM – 96 towers)

The excavation works is done in 52 tower foundations (about 54 % of the total) and is progressing on 17 foundations.

The concrete has been done in 45 tower foundations (about 47% of the total). Towers erected are 26 (about 27% of the total) .

LIQUICA – MALIANA (63 KM – 103 towers , provisional quantity)

Work done by the Indonesian Company THEATE .

Excavation completed is done in 14 tower foundations (about 13% of the total). The concrete has been done in 6 tower foundations (about 6%of the total).

MALIANA – SUAI (26 KM – 67 towers , provisional quantity)

The field survey work of the remaining 27 Km (about) has been completed .

SUAI- CASSA (81 KM – 203 towers , provisional quantity)

The remaining portion of the field survey has been completed .

CASSA- BETANO

Field survey of the remaining 25 Km has been completed except last two KM near the power plant , waiting for the final position of the switchyard .

BETANO - VIQUEQUE (81.52 KM – 190 towers, provisional quantity)

The excavation work is done in 7 foundations and is in progress in 7 .

The work in this section has been heavily affected by the rain.

VIQUEQUE – LOSPALOS (99.70 KM - 223 towers , provisional quantity)

The excavation works is done in 5 foundations and is in progress in 5 foundations . The work in this section has been heavily affected by the rain.

Substations

DILI SUBSTATION

The major civil work is concentrated in the finishing inside the main control building and inside the 20KV building , otherwise installation of equipment can not be done.

- The fencing bricks wall in the east side is completed.
- The water sewage system is in progress.
- In the roofs of the 20KV building and main control building the insulation work is done, while for the water proof membrane to be applied , materials not available yet.
- The grounding network installation is 95% completed.
- Installation of the steel supporting structures is completed in the 150 KV area .
- Assembly of the two 31.5 MVA transformers is well in progress.
- Installation of the Disconnecting Switches in the 150KV area is in progress.
- water piping system and hydrant along the internal roads of the substation is in progress.

MANATUTO SUBSTATION

Civil works is progressing .

- In the main control building all internal plastering is done , ground floor is concreted.
- In the 20 KV building the bricks walls are done
- Cable trench construction is proceeding and about 100 meter is done.
- Pumps house the concrete structure is done.
- Foundations of the 20KV capacitors are done
- Erection of 150 KV steel structures is 90% completed .

BAUCAU SUBSTATION

The foundation of the main transformer is completed.

The excavation of foundation of the Main control building is done and lean concrete placed .

The excavation of foundation of the 20KV building is done and lean concrete placed.

Excavation for the fence wall will start in the coming week.

LOS PALOS SUBSTATION

Construction of the fence wall is progressing and about 300 meters already done .

The foundation of the Main control building , reinforcing steel is in progress.

The foundation of the 20KV building , reinforcing steel in progress.

The foundations in the area 150KV, No 4 units are in preparation for concrete.

The foundation of the main transformer is done .

LIQUICA SUBSTATION

Construction of the stone retaining wall in the south part is in progress (completed 30%). In the main control building the concrete structure of the roof has been completed . In the 20 KV building the concrete structure of the roof has been completed_

Concrete foundations for the supporting steel structures in the 150KV area are completed.
The foundation of the guard house is excavated and lean concrete placed.

MALIANA SUBSTATION

The activity of site levelling and embankment compaction is in progress , rain is causing an obstacle to this work

SUAI SUBSTATION

No activity. Land owners are still waiting for compensation of the trees to be cut. This situation is pending since long time , the site cannot be handed over to the Contractor and consequently this Substation shall be completed with months of delay.

CASSA SUBSTATION

The activity of site levelling and compaction of the embankment is in progress and shall be completed next week if rain will not cause problem .

Soil investigation is also due to start next week.

Permanent access road to the substation may require that compensation be paid to the land owners.

VIQUEQUE SUBSTATION

After the site levelling no activity is reported .

The group of 28 workers arrived from China and on site are now arranging the temporary facilities . Next week this group will start construction work in the substation.

Hera Power Plant

The construction of the Oil Tanks is proceeding and the present situation is the following:

- One tank of 5000 M3 is completed and Hydraulic test is in process , the tank is being filled with water , now 2 meter high . Monitoring of the settlement is constantly done with optical instrument level.
- One oil tank of 5000 M3 is totally assembled and welded, installation of inlet pipes is in progress.
- One tank of 5000 M3 , the assembly reached the fifth ring wall (eight in total) .
- Three tanks of 1000 M3 the assembly reached the fourths ring wall (seven in total)
- Two tanks of 300 M3 are with the roof (dome) done and with the lifting devices already placed in position.

3) Delivery of Material and Equipment

At Dili port arrived No 3 excavators and 4 containers with electrical equipments for Dili substation : disconnecting switches , circuit breakers , surge arresters , cables , insulators . And also other material such as towers structures , anchor bolts , structures for Liquica Substation , tiles for the floors of main buildings.

The Prime Minister in person had to intervene with port's Authority to obtain a quick release of the goods.

4) Drawings and technical specifications

Sichuan Electrical Power Design Institute is now preparing for all the substations the revision B of all electrical drawings , in particular for control and protection, for secondary equipment .

5) Insurance

Situation is unchanged .

6) Payments

The interim payment certificates No.10 for the month of December 2010 and No.11 for the month of January 2011, have been paid.

The interim payment certificate No. 12 for the month of February 2011, and No. 13 for the month of March are in process.

7) Environment & Safety

The Contractor is urged to submit the report of the fatal road accident done by a truck while transporting material to the site near Baucau and involving a pedestrian

8) Questions

Consultant Safety Engineer questioned the Contractor that workers are climbing the towers without safety belts and safety gear .

The present meeting started at 15:15 and ended at 18:15 .

Next meeting is scheduled for Monday May 16 , 2011 at 14:30 in Hera.



Minutes of Meeting

Contract Title: Hera Power Plant 120 MW 7 x W18V46

Project: P / 10045

Subject: 6th coordination meeting

Place: Hera site office

Date: 14.4.2011

Time: 15:00 —17:05

Attendance: According to attached list

Distribution: Participants, WFI project group

1 Agenda

- Previous minutes of meeting
- Issues according to Previous minutes of meeting
- Other issues

2 Previous Minutes Of Meeting

- Previous MoM approved by participants

3 HSE

- HSE revised plan to be submitted by the end of week 16

4 Factory Acceptance Test (Fat)

- FAT procedures submitted officially to ELC & Bonifica
- The schedule remains as the one submitted , engine tests 21.3- 25.3 in Trieste, generator tests 29.3
- The delegation from the owner is split into 2 group, 1: Parliament members via Jakarta, 2: EDTL via Singapore
- Important that test will be participated by EDTL and Consultant
- The delegation from Timor Leste consists of 4 persons from EDTL and members of parliament

PROGRAM OF THE DELEGATION

Leaving Dili via Singapore to Trieste	19.3.2011
Arrival to Trieste	20.3.2011
Attending engine FAT tests	21-25.3.2011
Leaving Trieste via Munich to Helsinki and Vaasa	26.3.2011
In Vaasa	27-28.3.2011
From Vaasa to Helsinki	28.3.2011
Attending generator test in Helsinki	29.3.2011
Leaving Helsinki via Frankfurt to Singapore	30.3.2011
Arriving Dili via Singapore.	31.3.2011

Two representatives of consultant from Milano head office have joined the delegation one in Trieste for engines and one in Helsinki for generators.

4.1 Tests of other two generators scheduled in April 14-19 but no official information has been

issued to the owner

5 Delivery, Procurement & Manufacturing Status

- The shipments (2) from Jakarta (Wika), 1st shipment arrived Dili port 30.3.2011 (tools and various equipment) and 2nd shipment ETA Hera naval port 15.4.2011, including piles, piling machines, tools, conduits, earthing cable and rebars
- Procedure to use Hera naval base to unload 2nd shipment of the material is in process, official verbal authorization has been given and a written letter will follow
- Major part of the Mechanical Auxiliaries from Wartsila will be in the first shipment, ETA Hera early June 2011
- The drawings of the switch yard designed by ABB Singapore will be submitted tentatively before the end of April 2011, priority to be given to civil and earthing system drawings
- Storage tank piping and instrumentation needs to be further clarified concerning position of the instrumentation by fact that tanks are now in advanced stage of the construction

6 Update of site progress

- Batching plant erection was completed but it requires some strengthening on the foundation of the hopper, will be fully operative by April 19th 2011

7 Transportation plan

- Heavy lifter transport survey done by two companies during week 8 for both Hera and Betano, waiting for their official method of statement
- The use of Naval base ramp in Hera for receiving shipments is authorized (written confirmation will be given)
- For wika shipments the local agent will be SDV and Global, concerning Wärtsilä equipment supply the local agent chosen will be mentioned in the method of statement
- Beach landing operations are included to heavy lift transportation method of statement and preparation of the landing area will be done by the (to be) selected heavy lift company
- Offers of the two companies are under evaluation by Wärtsilä Finland, selection was expected to be done during the first week of April 2011 but not yet finalised

8 Technical matters

8.1 Civil

- Civil detailed engineering 2 soft copies and 9 hard copies have been submitted to the Consultant and have been officially approved for construction
- Well no 2 has been abandoned due to high salinity
- Well no 1 (presently used by CNI22), water analyse is meeting the requirements and asked to be shared with CNI22 but CNI22 claims that capacity of the well is not enough for sharing
- Well no 3 is under construction, to be completed by the end of April Construction of the boundary fence is proceeding, up to date 800 m out of 1500 m is already constructed
- Detailed drawing of the area for fuel unloading station has been submitted, the area is ready to be occupied

Progress of civil works:

1 Unpiled foundations

Mass replacement 80% completed

2 Roads

Road base course 80% completed

3 Lay-down area:

Gravel filling and compaction 80% completed

4 Boundary wall

55% completed

8.2 Mechanical

- Preliminary design of storage tank area piping and instrumentation shall be submitted within April by WFI
- WFI Comments for CNI22 tank drawings with the indication of the position of nozzles not received. The preliminary drawings indicating new positions of the nozzles have been submitted and have to be compared with CNI22 drawings

8.3 Electrical

- Detailed electrical design for the power plant will be submitted section by section starting from April 20th

9 Other issues

- Draft of Integrated Environmental Management And Monitoring Plan has been handed over to PAE for comments and review
- EMMP to be submitted to the Consultant by 15.4.2011
- Betano site survey starting on 18. and 19.4.2011 by surveyors from contractor, consultant and people of EDTL , the exact location of the power plant area will be fixed with bench mark, coordinates and also elevation, Local authority Chief Suco and the Land Property Officer of Same to be informed accordingly

10 Next meeting

28.4.2011 at 14:30 at site in Hera

Prepared by:-Kari Ruuth, CMA



Minutes of Meeting

Contract Title: Hera Power Plant 120 MW 7 x W18V46

Project: P / 10045

Subject: CNI22 Storage Tanks

Place: Hera site office

Date: 19.4.2011

Time: 09:15 – 10:30

Attendance: According to attached list

Distribution:	P. Siswo Utomo	PAE
	Vivekenanda Mahalanabis	PAE
	Felice Maffei	ELC&Bonifica
	Zoltan Lukacsi	ELC&Bonifica
	Tapio Östman	CMA
	Mario Manguan	CMA
	Sebastian Mellberg	WFI
	Syed Abdullah	Wärtsilä Indonesia

CNI22 STORAGE TANKS

1 Mechanical issues

- CNI22 to provide a drawing of each tank with marked bill of material indicating which parts are included in their delivery (20.4.2011).
- CNI22 is not making any connections other than indicated in their plans
- CNI22 can provide parts for outside level indicators for add-on price, not installation
- CNI22 requires that all additional nozzles etc, which are not included in their delivery, must be done before CNI22 insulation
- Insulation to be made by CNI 22 as earlier agreed

2 Civil issues

- Grounding to be made by CNI22 according to Wärtsilä plans
- Presently CNI22 scheme of oily water and rain water disposal system not clear, PAE requested the Consultant to advice on the issue

3 CNI22 Schedule

- CNI22 starting hydro tests between 25.4 - 1.5.2011

4 Documents

- CNI22 to provide clean copy of the Plan Layout of the Oil Tank Area F152S-T0301-01+ piping layout F1521C-J14 to figure out the idea of CNI22 oily and rain water handling (hard copy+pdf)
- CNI22 to provide a drawing of each tank with marked bill of material indicating which parts are included in their delivery (20.4.2011).

Prepared by: Kari Ruuth, CMA



Minutes of Meeting

Contract Title: Hera Power Plant 120 MW 7 x W18V46
Project: P / 10045
Subject: 7th coordination meeting
Place: Hera site office
Date: 28.4.2011
Time: 15:00 – 17:00

Attendance: According to attached list
Distribution: Participants, WFI project group

1 Agenda

- Previous minutes of meeting
- Issues according to Previous minutes of meeting
- Other issues

2 Previous Minutes Of Meeting

- Previous MoM approved by participants

3 HSE

- HSE revised plan to be submitted by the end of week 17, hospital/ambulance contract still in progress

4 Factory Acceptance Test (Fat)

- FAT reports required by the Consultant on the tests done in March for 4 units
- The FAT of the remaining 3 units scheduled to be done from 16-27. Of May, the Owner is organizing a delegation to attend the test in Trieste Italy and after that will proceed to Helsinki Finland to ABB factory

5 Delivery, Procurement & Manufacturing Status

- The shipments (2) from Jakarta (Wika), 1st shipment arrived Dili port 30.3.2011 (tools and various equipment) and 2nd ship arrived Hera naval port 16.4.2011, including piles, piling machines, tools, conduits, earthing cable and rebars
- Procedure to use Hera naval base to unload 2nd shipment of the material went well without any major difficulties
- Shipment no 3 (1 container) is expected on 2.5.2011 to Dili port, the material consists of stainless steel pipes and generator seat for site use
- Shipment no 4 (remaining piles and deformed rebar) is expected to Dili port on 9.5.2011 and 15.5.2011 to the Hera site
- All building steel structures and major part of the Mechanical Auxiliaries from Wartsila will be in the first shipment, ETA Hera mid June 2011
- The drawings of the switch yard designed by ABB Singapore are still in progress. The drawing of the ABB earthing system was submitted to the Consultant, commented and returned for modifications. Drawings of detailed civil works were also received and have been returned and approved with comments. Drawings of 150kV SF6 switch gear were submitted and approved by the Consultant.
- Storage tank piping and instrumentation design is in progress
- Rain water and oily water drainage system is being reviewed by Wartsila Finland

6 Update of site progress

- Batching plant is in operational condition, 15m³/h achieved
- Unpiled foundations, mass replacement 80% completed

- Casting of black start and heat recovery container foundations done
- Road base course 90% completed
- Lay down area, gravel filling 70% completed
- Boundary wall 45% completed
- 3 PC of test piles have been driven, 30m, 30m and 19m PDA test completed for 30m piles, waiting for results from the PDA test contractor, expected by the end of this week
- Water well no 3 drilling is in progress at 48m

7 Transportation plan

- Heavy lifter transport company has been selected which is PT. Samapta Nusantara from Indonesia, this company has submitted their method statement for handling the heavy equipment from the ship to the site
- The use of Naval base ramp in Hera for receiving shipments is authorized and remains valid for future consignments
- For wika shipments the local agent will be SDV, concerning Wärtsilä equipment supply the local agent will be TLS
- Beach landing operations are included to heavy lift transportation method statement and preparation of the landing area will be done by the selected heavy lift company (PT Samapta Nusantara)

8 Technical matters

8.1 Civil

- Civil detailed engineering 2 soft copies and 9 hard copies have been submitted to the Consultant and have been officially approved for construction Earthing drawings included in the detailed civil design are superseded by the new earthing drawings showing the CADWELD connections
- Well no 2 has been abandoned due to high salinity
- Well no 1 (presently used by CNI22), water analyse is meeting the requirements and asked to be shared with CNI22 but CNI22 claims that capacity of the well is not enough for sharing

8.2 Mechanical

- Soft copy of mechanical detailed design drawings received, hard copy expected by 7.5.2011, to be submitted to the Consultant for approval

8.3 Electrical

- Detailed electrical design for the power plant will be submitted section by section starting from the beginning of May

9 Other issues

- Draft of Integrated Environmental Management And Monitoring Plan has been handed over to PAE for comments and review
- EMMP was submitted to the Consultant on 15.4.2011
- Comments were received on 20.4.2011 and a separate meeting of the subject is needed in order to clarify several aspects of the issue, meeting to be scheduled during the first week of May
- Betano site survey has been done. The map of the proposed site with the extent of the area has been given to the contractor in order to work out the layout and orientation issue. At mean time confirmation of this map by the land property of Same is in progress and is expected to be finalised on 3.5.2011, soil investigation will be started after the layout is defined

10 Next meetings

- 17.5.2011 at 14:30 at site in Hera
- 31.5.2011 at 14:30 at site in Hera
- 14.6.2011 at 14:30 at site in Hera
- 28.6.2011 at 14:30 at site in Hera

(pages 52-56 in original report)

FINANCIAL PROJECT STATEMENT

1.) Contract with CNI22

- A.) Contract signed on 25 October 2008. The total contract value of US \$ 360,366,947.00.
- B.) Amendment No. 1 signed on 27 February 2009. Total contract value unchanged of \$360,366,947.00 split in:
- (I) US \$ 91,038,377.00 for Power Plant, and its Facilities.
 - (II) US \$ 269,328,570.00 (Equivalent to Foreign Currency RNB 1,885,300,000.00) for Power Grid and it's Facilities.
- In addition to the above
- (III) US \$ 3,000,000.00 per year per a period of 5 years, and operation of the whole Power Plant, and Power Grid and Training of owner's nominated personnel.
- C.) Amendment No. 2 signed on 21 December 2009. The contract value has been increased of US \$ 6,764,277.00 due to the adjustment of the exchange rate between US \$ and Chinese currency RNB Renminbi.

New total contract price US\$ 367,131,224.00 split in:

- (I) US \$ 91,038,377.00 for Power Plant, and it's Facilities (unchanged)
- (II) US \$ 276,092,847.00 for Power Grid and it's Facilities,
- (III) US \$ 3,000,000.00 per year per 5 year period for management and operation of the whole Power Plant, and Power Grid and Training of owner's nominated personnel.

Fixed Contract Price not subject to any variation US \$ 367,131,224.00

- D.) Amendment No3. Draft has been prepared and is reflecting the cancellation of the two power plants.

The total new Contract Value is reduced of US\$ 91,038,377.00 and is equal to **US\$ 276,092,847.00. This amount will be increased in the Amendment No. 3 of the value of the works executed in Hera Power Plant : Mobilization - site facilities - site preparation - civil works – retaining wall – Oil Tanks construction etc.etc. Value estimated in US\$22 million.**

E.) Disbursement Schedule:

10% Advance Payment (on original contract value) \$ 36,713,122.00

US \$ 10,000.000.00	Paid on April 2009	Against Bank Guarantee of same amount
US \$ 10,550,000.00	Paid on December 2009	Against Bank Guarantee of US \$ Twelve Million
US \$ 1,450,000.00	Paid on February 2010	Covered by above Bank Guarantee
US \$ 14,713,122.00	Paid on August 2010 , covered by the performance security of	US \$ 36,713,122.00

90% of the new contract price

US \$ 248,483,562.30

To be paid the Contractor in monthly installment, in accordance to the progress of the works and as per the price schedule items.

The interim payments submitted, paid /or under process are:

Interim payment No.	Gross amount US\$	Net Amount US\$
1 (March, 2010)	5,872,855.58	4,699,733.18 paid
2 (April, 2010)	4,117,847.41	3,294,319.58 paid
3 (May, 2010)	3,439,526.40	2,756,729.20 paid
4 (June, 2010)	800,321.83	640,257.46 paid
5 (July, 2010)	4,891,259.53	3,915,378.36 in process
6 (August, 2010)	5,569,325.60	4,456,218.22 paid
7 (September, 2010)	13,593,524.10	10,877,498.39 paid
8 (October, 2010)	10,454,635.75	8,374,646.12 paid
9 (November, 2010)	10,552,883.93	8,463,473.67 paid
10 (December, 2010)	9,449,125.16	7,572,389.75 Paid
11 (January, 2011)	8,723,373.58	6,993,451.33 Paid
12 (February, 2011)	3,221,828.39	2,577,562.86 in Process
13 (March, 2011)	19,067,612.16	15,267,413.06 in Process
14 (April, 2011)	3,996,415.36	3,197,519.17 in Process
Total	103,750,534.78	81,086,590.35

2.) Contract with Puri Akraya Engineering Limited for Hera and Betano Power Plants

A) Contract signed on September 15, 2010 of value US \$ 352,569,123.00 inclusive of taxes, split in:

- | | |
|-------------------------|----------------------|
| (I) Hera power plant | US \$ 164,532,257.00 |
| (II) Betano power plant | US \$ 188,036,866.00 |

B. Disbursement Schedule

- | | |
|--------------------------|----------------------|
| 25 % advance payment | US \$ 88,142,281.00 |
| 75 % by Letter of Credit | US \$ 264,426,842.00 |

The amount of the LC will be split and withdrawn over a period of 16 months during the length of the contract.

C. Payment done

US \$ 40,000,000.00 (portion of the advance payment) paid on 30-12-2010 against a Bank Guarantee, this amount is related to Hera Power Plant.

US \$ 48,142,281.00 (balance of the advance payment) paid on 07-04-2011 against a Bank Guarantee, this amount is related to Betano Power Plant.

D. Supplemental Agreement

The Supplemental Agreement is covering the Exchange Rate fluctuation between US \$ and Euro and the cost of the two Switchyards 20 KV/150 KV of Hera and Betano. Exchange rate at contract signing was **1.2800**

For **Hera** the exchange rate has been fixed on December 31, 2010 (two working days ahead of the advance payment date) and is equal to **1.3362**

For **Betano** the exchange rate has been fixed on April 05, 2011 (two working days ahead of the advance payment date) and is equal to **1.4166**

To be noted that the price adjustment with above exchange rates is applicable only to the value of the materials and equipment imported from Europe and payable in Euro.

The supplemental agreement has been signed by the Prime Minister on April 14th, 2011.

The new Contract Amount is now as follow :

- Hera Power Plant US \$ 186,419,850.00
(Basic Contract US \$ 154,196,280.00 + Switchyard value Us \$ 14,500,000.00
+Taxes US\$ 11,410,628.00 + Exchange Rate Adjustment US \$ 6,312,942.00)
- Betano Power Plant US \$ 219,751,473.00
(Basic Contract US \$ 176,224,320.00 + Switchyard value US \$ 13,200,000.00
+Taxes US \$ 12,790,849.00 + Exchange Rate Adjustment US \$ 17,536,304.00)

E. Letter of Credit

The Letter of Credit (LC) in the format <confirmed , irrevocable , divisible , transferable> has been negotiated with ANZ Bank in Dili and HBSC in Singapore and is made operative from April 21, 2010.

The LC is covering the value of equipment and services for Hera Power Plant in the total amount of US \$ 170,000,000.00 and for Betano Power Plant in the total amount of US \$ 171,609,192.00.

3.) Contract with CSI Company,Lda of Timor Leste for 24 MW extension of Comoro power plant

- A. Contract signed on 23 December 2010.
Value US \$ 30,900,000.00 .
- B. Disbursement schedule
 - 1) Plant and equipment supplied from abroad:
 - 10% advance payment against a Bank Guarantee of same amount.
 - 50% against presentation of shipping documents.
 - 30% upon delivery of material at site.
 - 5% upon completion certificate.
 - 5% upon Operational Acceptance Certificate.
 - 2) Design Service
 - 10% advance payment against a Bank Guarantee of same amount. - 90% pro rata upon presentation and approval of drawings.
 - 3) Installation and other service
 - 10% advance payment against a Bank Guarantee of same amount.
 - 80% pro rata in accordance to the monthly progress.
 - 5% upon completion certificate
 - 5% upon Operational Acceptance Certificate .

The 10 % advance payment has not been requested by the Contractor.

The first interim payment for the month of April 2011 has been submitted in the Amount of US \$ 1,459,630.00 .

(pages 71-73 in original report)

a) Summary of Contracts Contractual Data

a-1 The 2nd Amendment to Contract Agreement No. RDTL — 812931 now effective as from December 21, 2009.

SCOPE OF WORKS:

The Contractor shall provide a complete National Electrical System consisting of Power Plants and Electrical Power Grid. The electrical system shall cover the whole country, shall be reliable and produce electric power to full capacity of the installed Power Plants and will be fully maintainable without interruption. The Power Plants and Electric Power Grid consist of the following, referred to as Works;

One (1) Power Plant located at Hera (N-E of Timor-Leste) with a capacity of not less than 120MW and One Power Plant at Betano (S-W of Timor-Leste) with a capacity of not less than 60MW including the relevant step up and switching Substations which shall have 20KV Distribution capability of not less than 5MW each.

As stipulated in the Amendment, the Owner requires to change the second hand engines with a brand new one and to increase the Power Plant capacity in **Betano from 60MW to 130MW**. For this new condition, the Contractor shall submit corresponding Proposal subject to verification and negotiation wherein the price of the second hand engines as per the previous Contract will be deducted from this Proposal and the differential amount will be added to the contract signed on December 21, 2009, and;

- (i) The existing Comoro and Hera and Betano Power Plants will be connected through the Power Grid.
- (ii) Around 715 Km length of the National Power Grid shall consist of 58 Km double circuits, 657 Km single circuit 150 KV transmission lines and 9 substations located at Dili, Baucau, Liquica, Manatuto, Lospalos, Viqueque, Cassa, SUai and Maliana. The actual length of Transmission Lines measured from Gantry to Gantry of each substations shall have no effect to the Total Contract Price in case there will be variance in plus or minus compared to the distance measured in the maps.
- (iii) 120 Km of 20 KV Distribution Lines to connect Aileu, Gleno, Same, and Ainaro from the nearest 150/20KV Substations, and connection of the Substation to the 20KV Power Grid. This total length of the Lines is fixed and additional kilometers of lines, if requested will be paid as an additional amount to the Contract prices in accordance to the unit rates indicated in the Contract Agreement;
- (iv) The possible relocation of the Power Plant in Betano shall be technically negotiated with no effect the Contract Price.

CONTRACT PRICE:

The Owner hereby agrees to pay to the Contractor in consideration of the performance by the Contractor of its obligations hereunder amounting to US\$ 367,131,224.00 aggregate of:

- (a) US\$ 91,038,377.00 (Ninety One Million Thirty Eight Thousand Three Hundred Seventy Seven US Dollars) for the two (2) Power Plants and their Facilities;
- (b) US\$ 276,092,847.00 (Two Hundred Seventy Six Million Ninety Two Thousand Eight Hundred Forty Seven US Dollars) for Power Grid 150 / 20 KV and its Facilities.

In addition US\$ 3,000,000.00 (Three Million US Dollars) per year for management and operation of the whole Power Plants and Power Grid including training of Owner's nominated personnel, computed from the issuance of the Certificate of Operational Acceptance of the Works or part thereof. For the management, operation and training of Owner's nominated personnel of the complete power grid of one (1) year the cost is

included and spread in above yearly amount.

The value of the Power Plants remains unchanged although the capacity of Betano has been increased;

Hera	120 MW
Betano from 60 MW to	130 MW

The increment of the Contract Price of US\$ 6,764,277.00 (Six Million Seven Hundred Sixty Four Thousand Two Hundred Seventy Seven US Dollars) due to the adjustment of the rate of exchange US\$/Renminbi has been added to the cost of the Power Grid.

NOTE : Following the decision of the Owner to cancel from CNI22's contract the two (2) power plant of Hera and Betano, a new contract has been signed with the Indonesian Contractor <Puri Akraya Engineering Limited> (contract signed on September 15, 2010) to build the two power plants using double combustion system gen/set supplied by Wartsila of Finland, the value of the project is now as follow:

Power Grid (Transmission Lines and substations including 20KV distribution line)	US \$ 276,092,847.00
Hera Power Plant	US \$ 164,532,257.00
Betano Power Plant	<u>US \$ 188,036,866.00</u>
TOTAL	US \$ 628,661,970.00

Following the Supplemental Agreement to the Contract No. RDTL 10004115 signed on April 14,2011 the price of the two Power Plants has been increased reflecting the variation of the exchange rate between US Dollar and EURO and the cost of the step-up 20KV/150KV switchyards.

The value of the project at present become as follow :

- Power Grid	US \$ 276,092,874.00
- Hera Power Plant	US \$ 186,419,850.00
- Betano Power Plant	<u>US \$ 219,751,473.00</u>
TOTAL	US \$ 682,264,197.00

To the above figure should be added :

- a) the cost related to additional works not Originally foreseen in the contract such as the Jetty to unload and pump the IRO to the Tanks and the administrative buildings .
- b) The part of the works done in Hera by CNI22 such as Oil Tanks – Protection Wall – embankment – Retaining Wall- Drainage Canal etc . The value of these works , now being analyzed in the amount of US \$ 22 Million , shall be incorporated in the Amendment NO.3

(pages 143-156 of original report)

ENVIRONMENTAL MANAGEMENT PLANS

April 2011

A. INTRODUCTION

An Environmental Management and Monitoring Plan (EMMP) was prepared by the Consultants (ELC in association with Bonifica S. p. A.) in August of 2009 for the National Electrical Power System For Timor Leste (Contract RDTL-92896). The Contractor - China Nuclear Industry 22nd Construction Company Limited (CNI22) – signed the Commitment Letter for the implementation of the EMMP in late March of 2010 binding the Company (CNI22) to the tenets and requirements of the said EMMP. The Environmental Management and Monitoring Plan (EMMoP) for the Hera and Betano Power Plants to be Constructed and Operated (5 years) by Puri Akraya Engineering Ltd. (PAE), which had taken over the , Contract for the said Power Plants have yet to be finalized. The Draft Of the EMMoP has already been provided to PAE and is still undergoing review by PAE. Timeline for finalization of the said EMMoP is end of March 2011.

This report discusses the status of the implementation of the EMMP as of 16 April 2011. Areas covered by this report are the following:

China Nuclear Industry 22nd Ltd.:

- Transmission Towers from Hera to Manatuto
- Transmission Towers from Baucau to Manatuto
- Transmission Towers from Baucau to Viqueque
- Transmission Towers from Baucau to Los Palos
- Dili Sub-Station
- Manatutuo Sub-Station
- Baucau Sub-Station
- Los Palos Sub-Station
- Cassa Sub-Station
- Maliana Sub-Station
- Viqueque Sub-Station
- Liquica Sub-Station
- Suay Sub-Station
- Vemasse Camp
- Lacro Camp
- Liquica Camp
- Baucau Camp
- VercolinEnilale Camp

Puri Akraya Engineering Ltd. (PAE):

- Hera Power Plant Site

China Shandong International Ltd.

- Comoro Power Plant Site

B. DESCRIPTION OF PROJECT

The project involves the development of a system of electrification which will cover the whole Timor Leste, at the most cost effective manner, reliable and should be maintained without interruption. The project has the following components:

- Construction of Heavy Fuel Oil Power Plants with a total generating capacity of 250MW;

- Construction of 9 Sub-stations all over East Timor
- Laying of transmission lines – 715 kilometers
- Laying of 20kV distribution lines – 120 kilometers

C. ENVIRONMENTAL REGULATORY REQUIREMENTS FOR TIMOR LESTE

GoTL requires projects to conform to relevant environmental guidelines such as Guideline 1 (amended March 2003): Environmental Requirements for Development Proposals. The Contractor (CNI22) have yet to secure the requisite permits and clearances from the National (Directorate of Environmental Services (DoE) under 'the Ministry for Economy and Development of the Government of Timor Leste (GoTL).

D. ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

The environmental management plan and environmental monitoring program for the National Electrical Power System for the Timor Leste was designed to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project. The EMMP was based on the internationally accepted environmental management and conservation practices, the existing environmental laws and regulations of the Government of Timor Leste (GoTL) and the Kyoto Protocol.

1. ENVIRONMENTAL MANAGEMENT

The Environmental Management Plan (EMP) is designed to ensure that the mitigating measures recommended to address the adverse impacts of the project on environment, life, and property are properly followed, while positive impacts are enhanced to gain maximum benefits. Table 1 presents the Summary Environmental Management Checklist as of April 2011.

a) DESIGNATION OF AN ENVIRONMENTAL OFFICER

It has been recommended during the Coordination Meeting of 16 November 2010 by the Supervising Consultants that the Contractor engage a full-time Environmental Specialist that has a good command of the English language. This was raised in view of the minimal accomplishment and non compliance of the Contractor to the EMMoP since commencement of works. This has still to be complied with.

b) DESIGNATION OF A HEALTH/MEDICAL OFFICER

The Contractor has on-site a Health/Medical Officer. However, the medical officer services aside from the Hera Power Plant, the workers in Dili, Manatuto, Liquica, Los Palos, Maliana Sub-Stations and the Baucau, Vemasse, Laclo, and Liquica Camps.

c) PREPARATION OF HEALTH AND SAFETY (HSP) AND SOLID WASTE MANAGEMENT PLANS

The QHSE Management Plan as submitted during the Audit of November 2010 has yet to be revised as per Envi Field Directive Nos. 1 and 2 of 01 June and 01 December 2010. The Contractor has yet to prepare the Solid Waste Management Plan for all the facilities and work areas.

d) SPILL CONTINGENCY/EMERGENCY RESPONSE PLAN

The Site Emergency Contingency as submitted during the Audit of May 2010 has yet to be revised as per Envi Field Directive Nos. 1 and 2 of 01 June and 01 December 2010.

TABLE 1. ENVIRONMENTAL MANAGEMENT CHECKLIST — APRIL 2011

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE YES NO		RESPONSIBLE ENTITIES	REMARKS
PRE-CONSTRUCTION PHASE						
LAND ACQUISITION	Loss of land	Just and fair compensation to landowners.	X		CNI22/ CSC/EDTL	See Table 2.
PLANNING SITE ACTIVITIES	Health hazards and risks to workers and residents of nearby communities	Prepare Occupational Health and Safety Plan	X		CNI22/ CSC/EDTL	The plan as submitted May 2010 has yet to be revised.
		Undertake consultations with local residents prior to mobilization	X		CNI22/ CSC/EDTL	Continuing Activity
	Social conflicts with local residents	Priority employment for local workers	X		CNI22/ CSC/EDTL	Local laborers are employed by the Contractor.
		Establishment of grievance/complaints desk at site offices		X	CNI22/ CSC/EDTL	No formal complaints/grievance desk has been established.
CONSTRUCTION PHASE						
ESTABLISHING CONSTRUCTION SITES	Generation of dust from clearing and grubbing	Minimize clearing to required area only	X		CNI22/ CSC/EDTL	Complying.
		Regular watering of exposed areas	X		CNI22/ CSC/EDTL	Undertaken daily.
ESTABLISHING CONSTRUCTION SITES	Soil Erosion due to exposure of topsoil	Re-vegetate when possible and practicable		X	CNI22/ CSC/EDTL	No re-vegetation has been undertaken to date.
	Generation of solid waste	Prepare Solid Waste Management Plan (SWMP)		X	CNI22/ CSC/EDTL	No SWMP to date.
	Conflicts with local residents	Undertake consultations with local residents	X		CNI22/ CSC/EDTL	On-going activity.
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Acute elevated levels of TSP/SO ₂ /NO _x	Minimize and control dust generation through regular spraying of exposed areas	X		CNI22/ CSC/EDTL	Undertaken daily
		Regular maintenance of heavy equipment, vehicles and machineries	X		CNI22/ CSC/EDTL	Undertaken regularly
CONSTRUCTION OF FACILITIES	Siltation and sedimentation of nearby water bodies	Containment and construction of siltation ponds and silt curtains		X	CNI22/ CSC/EDTL	None has been installed to date.
		Minimum vegetative removal	X		CNI22/ CSC/EDTL	Complied
		Proper management, handling and disposition of spoils and unsuitable materials	X		CNI22/ CSC/EDTL	Needs improvement

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE		RESPONSIBLE ENTITIES	REMARKS
			YES	NO		
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Contamination of nearby water bodies	Installation of oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas		X	CNI22/ CSC/EDTL	None has been Installed to date.
		Construction of bund walls of adequate capacity around fuel, oil and solvent storage tanks	X		CNI22/ CSC/EDTL	Complied
		Proper handling and storage of petroleum products and toxic and hazardous substances	X		CNI22/ CSC/EDTL	Complied
		Installation of sanitation facilities in camps and site offices	X		CNI22/ CSC/EDTL	Camp of sub-contractors are unacceptable.
		Installation of waste treatment facilities In ancillary facilities such as batching plants and related facilities		X	CNI22/ CSC/EDTL	None have been established to date.
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Acute elevated levels of noise	Operation of heavy equipment and other appurtenant facilities will be limited during daytime - 0800-1700. Should operation beyond these hours is required, proper notification shall be given the concerned local government officials	X		CNI22/ CSC/EDTL	On-going
		Regular maintenance of heavy equipment and machineries	X		CNI22/ CSC/EDTL	On-going
		Establishment of buffers between nearby settlement areas and work areas		X	CNI22/ CSC/EDTL	None have been established to date.
	Loss of habitat	Cutting of trees and clearing of vegetative cover to be undertaken only when necessary	X		CNI22/ CSC/EDTL	Complied
		Relevant permits and clearances will be secured prior to cutting and clearing activities		X	CNI22/ CSC/EDTL	No permits have been presented to date.
	Migration/Loss of wildlife	Habitat development and generation through planting of Indigenous species		X	CNI22/ CSC/EDTL	None undertaken to date.
		Re-vegetation of cleared areas		X	CNI22/ CSC/EDTL	None
	Loss of aesthetic values	Landscape development and design when possible and practicable		X	CNI22/ CSC/EDTL	None

e) PREVENTION OF POLLUTION (AIR, WATER AND NOISE)

As reported in the previous Audit, the Contractor undertakes regular wetting/watering of exposed grounds to prevent re-suspension of particulates on a daily basis. Service vehicles, trucks, heavy equipment and machineries are regularly maintained.

The toilet and bath areas of the Vemasse and Baucau-Manatuto Camps comprise mainly of makeshift structures located along the beach area at the back of the main camp. Human waste is directly discharged into the sea with no proper treatment before final discharge into the receiving water body. This is highly unacceptable as this adversely impacts the receiving waters and marine life in the area. The Contractor has been already instructed to rectify this as per Envi Site Instruction Number 2 dated 01 December 2010. This has yet to be complied with by the Contractor.

f) PROTECTION OF TREES AND VEGETATION

Clearing of areas with trees and vegetation are only undertaken in required areas. There are no major issues or concerns relative to this aspect of the EMMoP.

g) RELATIONS WITH LOCAL COMMUNITIES AND AUTHORITIES

Consultations are still regularly conducted with the affected communities by the Consultants to inform the local leaders and populace of the on-going works. This serves as a monitoring activity as to the issues and concerns of the stakeholders relevant to the project. As in most projects of this type, land acquisition and hiring of local workers is the major issue that normally arises. The ROW acquisition for Facilities and Transmission Towers, which is the responsibility of the GoTL has been adequately and expeditiously addressed. Table 2 presents the ROW issues raised from December 2010 to March 2011.

TABLE 2. ROW PROBLEMS DURING WORKS, NOVEMBER 2010 - JANUARY 2011

DATE	SUBJECT OF COMPLAINT	WORK SITE	SUB-SECTION	REMARKS
14 January 2011	Foundation	N-1	Dili-Liquica	Not yet resolved
24 January 2011	Foundation	N-2	Dili-Liquica	Already resolved
24 January 2011	Foundation	N-3	Dili-Liquica	Already resolved
31 January 2011	Foundation	N-4	Dili-Liquica	Already resolved
28 January 2011	Foundation	N-5	Dili-Liquica	Already resolved
08 February 2011	Foundation	N-15	Dili-Liquica	Not yet resolved
18 February 2011	Foundation	N-17	Dili-Liquica	Already resolved
03 December 2010	Foundation	N-28	Dili-Liquica	Already resolved
16 November 2010	Foundation	N-73	Dili-Liquica	Not resolved
23 February 2010	Foundation	N-77	Dili-Liquica	Not resolved
	Foundation	N-2,3,4	Dili-Liquica	Not resolved
09 October 2010	Access Road	N-15 N-17 N-67 N-73 N-77	Dili-Liquica	This was already resolved but since the Contractor did not start works immediately the local people closed the access again. Not resolved

h) PRIVATELY OR COMMUNITY OWNED SERVICES AND STRUCTURES

Compensation for private property that has been affected by the works is expeditiously addressed by the GoTL to the extent possible. Public services have not been affected by the current works.

i) OCCUPATIONAL HEALTH AND SAFETY

PROTECTIVE CLOTHING AND SAFETY EQUIPMENT

As reported in the previous Audit, workers are provided the basic PPE such as hard hats (Timorese and Chinese) and safety shoes (only for Chinese workers). Consultants were provided safety shoes and hard hats by ELC & Bonifica.

MEDICAL AND FIRST AID FACILITIES

The Contractor has on-site (Hera Power Plant Facility) a room designated as a clinic and a Medical Officer to service the medical requirements of the workers. However, the medical officer services, aside from the Hera Power Plant, the workers in Dili Sub-Station, Manatuto Sub-Station and the Baucau, Vemasse, Lacro, and Liquica Camps and all other Camps of CNI222.

SUPPLY OF DRINKING WATER AND SANITATION

As reported in the previous Audit, the water for the Vemasse camp is sourced from a well drilled within the facility. As per information gathered from the workers residing in the facility, the water is not suitable for human consumption. The water is salty owing to the fact that the aquifer is already salt water intruded as it is located in close proximity of the sea. Drinking water is secured from commercial sources (bottled water) or water is boiled before consumption. There is no source of domestic water in the other Camps on site and water is delivered to the Compound and stored in tanks. This however is not potable and unfit for human consumption and is mainly utilized for bathing and washing.

TEMPORARY FACILITIES FOR WORKERS INCLUDING SANITATION AND WASTE DISPOSAL

There exist no sanitary facilities to address the requirements of the occupants of the Baucau camp. The toilet consists of only an open pit located at the back of the compound near the shoreline and there is no bath area provided. As was observed in all the facilities of the Contractor, basic housekeeping is not strictly implemented. In most of the camps and facilities visited, solid waste, materials, etc are scattered and are not properly stored, handled and disposed

TRAFFIC MANAGEMENT

There is no traffic management being implemented in the facilities and no traffic management plan submitted by the Contractor to the Consultants.

2. ENVIRONMENTAL MONITORING

An integral part of the environmental protection is the continuous monitoring of the condition of the receiving environment to determine if any undesirable changes are occurring as a result of the project. The Contractor has yet to commence the conduct of the Baseline Survey and Monthly Monitoring for Air, Noise and Water Quality. This activity should have been conducted upon induction of the Contractor to the site.

3. REPORTING REQUIREMENTS

As was reported in the previous audit (December 2010), the Contractor have not submitted any monthly environmental management and monitoring report since mobilization in January 2010. As per the EMMoP prepared for the Project, the Contractor is contractually obligated to prepare monthly environmental monitoring reports covering the implementation of the EMMoP and discussing the environmental aspects of the project. The Contractor has not complied with this requirement since his induction in the project.

E. ISSUES AND CONCERNS

- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December,

the Contractor is obligated to secure the requisite **Environmental Permits and Clearances from the National Directorate for Environmental Conservation**. To date, the Contractor has not presented the necessary Development Permits and Clearances as required by the National Laws, Rules and Regulations of the GoTL.

- As was cited in the previous audit, the EMMoP stipulates that a Baseline Survey for Air, Noise and Water Quality. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010. The Contractor has not yet conducted this activity to date.
- As was cited in the previous audit, the EMMoP stipulates that Monthly Environmental Monitoring for Air, Noise and Water Quality be conducted as expounded in Table 3 of the said EMMP. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010 but has yet to conduct this activity to date.
- As was cited in the previous audit, the Contractor should submit a Monthly Environmental Management and Monitoring Report, the format for which is presented in Annex B of the said EMMP. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010 but has yet to comply to date.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, a formal grievance and complaints desk should be established by the Contractor in the facilities to receive complaints, issue and concerns of the stakeholders. The Contractor should have on his staff a Community Relations Officer (CRO) that will liaise and coordinate with the local communities together with the local staff of the Consultants. This has yet to be complied with by the Contractor
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010 the EMMoP stipulates that (see Item 4.1.3) the Contractor should prepare a Solid Waste Management Plan and submitted to the Consultants within one (1) month of his arrival on-site. The Contractor has yet to comply with this requirement to date.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010 the Contractor was directed to construct siltation ponds to address discharge of silted runoff into nearby receiving bodies, of water. To date, the Contractor has yet to comply with this requirement.
- Oil and grease traps in drainage systems from workshops, vehicle washing facilities and service and fuelling areas have yet to be installed by the Contractor. The Contractor was already cited for this in the previous audit and the Field Directive Envi 02 dated 01 December 2010.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, appurtenant pollution control devices should be installed in the ancillary facilities such as the Batching Plant within the Hera Power Plant. Particulate Matter (PM) and wastewater generated by the operation of the plant need to be addressed to mitigate health risk to workers and mitigate further degradation of nearby water bodies. The Contractor has yet to comply with this requirement.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, the Site Emergency Contingency Plan and the Quality, Health, Safety and Environment Management System as prepared by the Contractor should be revised to include pertinent operational details. This has yet to be complied with by the Contractor.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, the Contractor was directed to provide a separate medical facility for the Dili Sub Station with the requisite medical officer, equipment and supplies. This should also be undertaken in the other facilities and camps. No compliance has been made by the Contractor on this item.

- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, the accommodations provided the Transmission Tower Construction Group adjacent to the main facility in Hera is unacceptable, unsanitary and unhygienic and poses a grave health and safety risk to the workers. The Contractor was directed to rectify this but has yet to comply. Proper accommodations with the requisite sanitation facilities should also be provided the other camps in the project.

F. RECOMMENDATIONS

- 1) The Contractor (CNI22) engage a full-time Environmental Specialist for the Project, preferably with a good command of the English language to be responsible for the implementation of the EMMoP and other environmental concerns. See Site Instruction Envi 02-03 dated 01 December 2010 and 16 April 2011.
- 2) The Vemassee and Baucau-Los Palos Camp should be provided with sanitary toilet and bath facilities with the requisite treatment facilities so as not to adversely impact the receiving body of water adjacent to the Camp. Discharge of untreated effluents should be discontinued until proper treatment facilities are established in the Camp.
- 3) Potable water supply should also be provided all Camps to preclude the occurrence of attendant diseases related to the ingestion of non-potable water.
- 4) The accommodations provided in the Vemassee camp are cramped with an average of 15 workers occupying each room. Additional rooms should be constructed as this condition is unhealthy and is very conducive to the spread of contagious diseases. This has already been raised in the Environmental Audit No. 2 dated 01 December 2011.
- 5) Proper housekeeping and materials storage should be implemented in all the Camps of CNI22. This would prevent conditions that would allow pests, rodents and other vectors to proliferate in the area.

G. CONCLUSIONS

There has been no major accomplishment in the implementation of the Environmental Management and Monitoring Plan and in the general environmental aspects by the Contractor reckoned from the previous audit undertaken in December 2010. To date, the Contractor (CNI22) has yet to commence the implementation of the EMMoP. As such, they are not fulfilling the agreement as it is their contractual obligation to implement this as part of their works by virtue of the Commitment Letter they signed in March 2010.

OCCUPATIONAL SAFETY & HEALTH (OSH)

CNI22

The absence of CNI22's safety engineer (on VL) has led to the deterioration in the safety implementation in all sites. While wearing of fall protection is practiced at some sites particularly by the group doing the 150KV line installation, another group doing the tower stringing do not wear fall protection equipment as seen in one of the photos taken at the Hera site. The hazards associated with the high risk work of climbing around 40 meters from the ground without the benefit of fall arrester will be fatal and if he survives, it could probably cost him a lost limb. This practice of not providing fall protection gear for overhead works should not be allowed to continue for the risk is too high.

SUBSTATIONS, HERA FUEL TANK, & TRANSMISSION LINE WORKS:

SUBSTATIONS:

Safety implementation at the different locations of this project differs to some degree and it is believed that CNI22 management is not aware as to what is done relatively acceptable at some substation sites are not being done in some sites. This demonstrates weakness in providing clear expectations to their line management for a standardized implementation of

their safety practices.

TRANSMISSION LINE WORK:

It has been observed that safety is not being practiced by the CNI22 workers as much as their subcontractors, which are of Indonesian origin in the execution of the task at hand. Worker and the safety of the public is not taken into consideration which can lead to disastrous event if not addressed hereon. They tend to focus more in the completion (schedule) of the job which is also fine but they must also factor in the safety aspect in their procedures for what good would it be to have it completed but with people's lives snuffed out due to negligence and which could have been prevented if safety was given due diligence.

PAE (Hera Power Plant & Betano Power Plant)

The Hera power plant construction is proceeding smoothly as possible since all their activities had been pre-planned taking into consideration safety precautions that minimizes or rather eliminates the hazards posed by the activity. Meanwhile, the Betano power plant project is on the surveying stage establishing boundaries of the plant location so far.

SUMMARY:

Verily, it can be said that the two contractors varies in putting into practice what their individual companies has committed in ensuring the protection and safety of their employees, the public, and the environment. As it has been our goal to have "zero accident", "zero injury" for this project, with the current situation it will be a herculean task to achieve if the corresponding management of both contractors will not provide the much needed support in terms of logistics, i.e. safety manpower and resources.

PROBLEMS / ISSUES AND RECOMMENDATIONS

Problems/Issues Encountered:

1. Communication problems for technical staff and workers of the contractor who cannot speak nor understand the English Language. Consultant Inspectors find difficulty to give direct instructions on site to Chinese workers due to communications barrier with oftentimes no responsible supervisor present on site.
2. Returned Drawings with comment to the Contractor for revision were not submitted back to the Consultant for stamp of "APPROVED FOR CONSTRUCTION".
3. Work preparation not carefully planned to match with the existing site conditions, such as rains and landowner's interference for access.
4. Unprofessional handling of the materials during loading, unloading and transporting from the yard to the site that causes heavy damages to the materials itself.
5. Working safety practices on sites and procedures such as warning signs for incoming vehicles are not placed along the main roads to preclude accidents and PPE's for workers is not strictly implemented.
6. Coordination with local residents around the work sites is not properly handled.

Recommendations/Actions:

1. The Contractor must provide technical staff good in English communication to facilitate better understanding to the field instructions issued by the Owner's Representatives and Consultant.
2. The Contractor is instructed to submit ALL RETURNED DRAWINGS WITH COMMENTS to the Consultant for proper stamping of *<approved for construction>*.
3. The Contractor supervisors, particularly QA/QC personnel, Safety Officer must inspect always and constantly monitor the works done on sites to guarantee that all works are according to the approved plans and specifications and upholds the safety program at the construction sites. Likewise, plan in advance and study the corresponding weather situation around the areas of responsibilities to insure the work progress since different locality have different weather scenario.
4. The Contractor's Planning Engineer must coordinate, monitor the progress of the works against submitted approved time schedule, and have a close coordination with the responsible in-charge of different sites to facilitate any adjustment made to get back in track the project in general.
5. The Contractor is instructed to employ more qualified and knowledgeable staffs workers to manage, handle materials from the lay down area, unloading and loading from/to the vehicles to prevent damages and to prevent that material is rejected.
6. The Contractor should supply to all workers the Personal Protective Equipment (PPE), which must be strictly worn by everybody on the jobsite.
7. The Contractor is reminded that after one activity has been completed, the working area must be left clean and free from papers, plastic, bottles, cans, timbers and any sort of garbage to adhere to the environmental program and promote good relationship and gain respect from the local residents.