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

Monthly Progress Report
November 2011

<table>
<thead>
<tr>
<th>Rev.</th>
<th>Date</th>
<th>Author</th>
<th>Checked</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Myra B. Sacramento</td>
<td>Zoltan Lukacs</td>
<td>Felice Maffei</td>
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</tbody>
</table>

Project:
Construction Supervision Services for Building of the National Electrical Power System for the Timor-Leste

No. of Pages: 198
Date: December 10, 2011

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Scanned from original document. For more information about this project, see http://www.laohamutuk.org/Oil/Power/2011/11PowerPlant2011.htm
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PART I CONSULTANT REPORT

a) LOCATION MAP
b) CONSULTANT’S ORGANIZATIONAL CHART
c) EXECUTIVE SUMMARY, MINUTE OF MEETINGS and PROJECT SCHEDULE & S-CURVE

EXECUTIVE SUMMARY

(pages 8-22 in original report)

For the Month of NOVEMBER 2011

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

A) CNI22 – Power Grid (150 KV Transmission Lines, Substations, 20KV distribution lines and Hera Facilities & Oil Tanks)

In order to meet the target of November 27, 2011 the Contractor concentrated all its efforts to complete essential works remaining to be done in the substations of Liquica -Dili – Manatuto and in the transmission lines Hera-Dili, Dili-Liquica and Hera-Manatuto. Finally the Contractor succeeded to make this portion of the power grid in conditions to be energized.

First < trial test > from Hera up to Liquica was done on November 24, 2011 and in subsequent days energizing was done progressively for longer hours in order to assure the perfect functionality by November 27, 2011.

The Line Hera – Manatuto and the substation of Manatuto have been energized On November 30, 2011.

The obligation of the Contractor is fulfilled only in part since the Power Grid section from Manatuto to Baucau, from Baucau to Lospalos shall be energized (maybe) by Christmas time and the section from Baucau to Viqueque is now shifted to end of March 2012.

As previously stated the transmission lines from Liquica up to Lospalos shall be considered substantially completed, but the Contractor is well aware that various works remain to be done on each towers such as: installation of anti-climbing devices, danger plates, name and number plates, phase plates, concrete caps above the anchor bolts and adjustment of the soil level around the tower foundation.

Concerning the 20 KV local network in Dili, feeder No.1, feeder No. 2 and Feeder No. 6 have been energized simultaneously with the substation, while Feeders No.3, 4 and 5 shall be made ready to be energized by Christmas time.

In the districts of Liquica and Manatuto the local 20KV networks are feed through the new substations respectively as from 27 November and 30 November, 2011.

The total progress achieved at the end of November 2011 by CNI22 is 79.50 % against the planned 83.96 % (this percentage is calculated on the total value of the contract as per the Amendment No. 3).

Individual segment of the project have the following progress:

1) Transmission lines 80.17% (+ 5.39% from previous month)
2) Substations 80.78% (+ 15.35% from previous month)
3) Hera oil tanks 100.00% (+ 2.49% from previous month)
4) 20 KV Lines 46.35% (+ 3.34% from previous month)

Events of this month, to be highlighted:

- The visit to Dili substation on November 10th of H.E. the President Jose’ Ramos Horta.
- The visit to Dili substation on November 26th of H.E. the Minister of Infrastructures Pedro Lay.

The progress of the works in the various sectors done by CNI22 during the month of November 2011 can be summarized as follow:
Dili Substation:
Substantially considered completed and energized for trial test on 24 November 2011.
Minor defects remain to be rectified, civil works as well as electrical works in accordance to the punch lists submitted, these defects do not hamper the functionality of the substation.

Manatuto Substation
Substantially considered completed and energized for trial test on 30 November 2011.
Minor defects remain to be rectified, civil works as well as electrical works in accordance to the punch lists submitted, these defects do not hamper the functionality of the substation.

Liquica Substation
Substantially considered completed and energized for trial test on 24 November 2011.
Minor defects remain to be rectified, civil works as well as electrical works in accordance to the punch lists submitted, these defects do not hamper the functionality of the substation.

Baucau Substation
The Contractor scheduled to energize this substation on December 23, 2011.
The situation of the major works is the following:

- Main Control building civil work is completed up to 95%.
- 20KV building civil work is completed up to 95%.
- 150KV Switchyard, installation of the grounding system is 95% done.
- Construction of main cable trench is completed up to 96%.
- Sewage system is completed up to 95%.
- Pump house and fire fighting pool is completed up to 90%.
- Water drainage is completed up to 80%.
- Construction of internal roads is done up to 35%.
- Erection of the steel structures 95%.
- Water supply system 80%.
- All outdoor electrical equipments installation done up to 80%.
- All indoor, in the main control building and 20 KV building, electrical equipments Installation done up to 70%.
- Assembly of the main transformer done up to 90%.
- Fire alarm system done up to 80%.
- General grounding system of the substation done up to 90%.

Lospalos Substation
The Contractor scheduled to energize this substation on December 24, 2011.
The situation of the major works is the following:

- Main control building civil work is completed up to 95%.
- 20 KV building civil work is completed up to 95%.
- Installation of all steel structures completed up to 95%.
- Guard house completed up to 90%.
- Drainage ditch around the fence wall completed up to 85%.
- Construction of the pump house completed up to 90%.
- Grounding installation completed up to 95%.
- Installation of all outdoor electrical equipment completed up to 85%.
• Installation of all electrical equipment inside main control building and 20 KV building is done up to 80%.
• Installation of the capacitor bank completed up to 95%.
• Assembly of the transformer Completed up to 95%.

Viqueque Substation

The Contractor scheduled to complete this substation by March 2012.

Major works remaining to be done:
• Main Control building, internal finishing works including the cable trench 30%.
• 20 KV building, internal finishing works including cable trench 30%.
• Fence wall construction 50%.
• Guard house pump house and fire fighting pool 20%.
• Main cable trench 10%.
• Drainage System 20%.
• Installation of all steel structures 90%.
• Installation of all outdoor electrical equipment.
• Installation of all indoor electrical equipment.
• Complete assembly of the transformer.

Maliana Substation

The Contractor scheduled to complete this substation by March 2012.

Works progress as follow:
• Construction of the bricks fencing wall is done, plastering 50% done.
• Main Control Building, bricks walls 20% done.
• 20 KV Building, indoor cable trench is done, bricks walls to be started.
• Guard house, masonry walls are done.
• Pump house, masonry walls are done.
• Sewage treatment system 50% done.
• Construction of the supports foundations on 150 KV area is done.
• Foundations of the capacitor bank are done.
• Main cable trench 50% is done.

Suai Substation

• No activity. The situation with Land Owners is unchanged, they are waiting for the compensation for the trees to be cut. This situation is now very critical for the Contractor that cannot start its activity. The Contractor for this delay may ask for prices revision of the civil work construction and installation.

Cassa Substation

The Contractor scheduled to complete this substation by April 2012.

The civil work is in progress and the situation is the following:
• Foundation of the main control building is done.
• Excavation of the 20 KV building is done, lean concrete placed 50%.
• Excavation of the fencing wall is done.
• Construction of the retaining wall is 50% done.
• Excavation of the transformer foundation is done and lean concrete placed.
Hera Power Plant (Part of CNI22 Competence)
The construction of the Oil Tanks by CNI22 is substantially completed, the following remaining activities have been also completed:
- Calibration of the volume of each tank.
- Construction of the access stair cases outside the fire protection wall.

One of the 1000 M3 tank has been put into operation as from 8 November 2011 by filling with LFO transported from Tibar by truck tankers.

150 KV Transmission Lines
- **Hera – Dili : Total number of Double Circuit Towers** 30 units (9.891 Km)
  - This section of line is **substantially completed** and has been **energized on 24 November 2011 for trial test**.
  - Works remaining to be done:
    - Installation of anti-climbing devices, danger plates, phase plates, number plates, name plates.
    - Construction of the concrete caps on the anchor bolts in each tower’s leg.

- **Hera – Manatuto : Total number of Double Circuit Towers** 91 units (40.902 Km).
  - This section of line is **substantially completed** and has been **energized on 30 November 2011 for trial test**.
  - Works remaining to be done:
    - Installation of anti-climbing devices, danger plates, phase plates, number plates, name plates.
    - Construction of concrete caps on the anchor bolts in each tower’s leg.

- **Manatuto – Baucau : Total number of Single Circuit Tower** 132 units (52.329 Km).
  - This section of line is **substantially completed**. Works remaining to be done:
    - Connection to Baucau substation gantry.
    - Installation of anti-climbing devices, danger plates, phase plates, number plates, name plates.
    - Construction of concrete caps on the anchor bolts in each tower’s leg.
    - Cutting of trees up to a distance of 4.5 m from conductors.
    - Test and commissioning.

- **Baucau – Lospalos : Total number of single circuit tower** 143 units (63.499 Km).
  - This section of line is **substantially completed**. Works remaining to be done:
    - Connection to Baucau and Lospalos substations Gantry.
    - Installation of anti-climbing devices, danger plates, phase plates, number plates, name plates.
    - Construction of concrete caps on the anchor bolts in each tower’s leg.
    - Cutting of trees up to a distance of 4.5 m from conductors.
    - Test and commissioning.

- **Baucau – Viqueque :Total number of single circuit tower** 108 units (43.125Km)
  - Total number of Tower Foundations Excavated 108
  - Total number of Tower Foundations Concreted 108
  - Total number of Towers Erected 97
  - Total number of Tower-stringing of conductors 87
Dili – Liquica: Total number of single circuit tower 87 units (38.818 Km)

This section of line is substantially completed and has been energized for trial test on 24 November 2011.

Works remaining to be done:
- Installation of anti-climbing devices, danger plates, phases plates, number plates and name plates.
- Construction of concrete caps on the anchor bolts in each tower’s leg.

Liquica – Maliana: Total number of single circuit tower 109 units (44.921 Km)

- Total number of Tower Foundations Excavated 101
- Total number of Tower Foundations Concreted 88
- Total number of Towers Erected 29
- Total number of Towers-Stringing of Conductors --

Maliana – Suai: Total number of single circuit tower 134 units (57.621 Km)

- Total number of Tower Foundations Excavated 10
- Total number of Tower Foundations Concreted 6
- Total number of Towers Erected --
- Total number of Towers-Stringing of Conductors --

Suai – Cassa: Total number of single circuit tower 98 units (38.555 Km)

No activity.

Cassa – Betano: Total number of single circuit tower 54 units (24.104 Km provisional)

- Total number of Tower Foundation Excavated 35
- Total number of Tower Foundation Concreted 35
- Total number of Tower Erected --
- Total number of Towers-Stringing of Conductors --

Betano – Viqueque: Total number of single circuit tower 196 units (83.391 Km provisional)

- Total number of Tower Foundations Excavated 148
- Total number of Tower Foundations Concreted 136
- Total number of Towers Erected 39
- Total number of Towers-Stringing of Conductors --

Viqueque – Lospalos: Total number of single circuit tower 233 units (103.439 Km)

- Total number of Tower Foundations Excavated 208
- Total number of Tower Foundations Concreted 189
- Total number of Towers Erected 114
- Total number of Towers-Stringing of Conductors --

The performance of the Contractor CNI22 in the overall, despite its attempt to recover some of the delay, remains poor in particular concerning the quality of the finishing works.

20 KV Distribution Lines

Dili – Aileu – Gleno (KM 60.10)

This line start from Dili substation (Becora) until Seloi with double circuit, and from Seloi one circuit goes to Aileu and one circuit goes to Gleno.

The Contractor stated that this line will be completed before Christmas time.

Becora – Seloi 634 poles installed (total required 634)
  Stringing of conductors done in 480 poles.

Seloi – Gleno 440 poles installed (total required 440)
Stringing of conductors not started.

**Seloi - Aileu** 128 poles installed (total required 128)
Stringing of conductors done in 100 poles.

- **Betano – Same** (KM 26.20)
  No activity along this section.

- **Cassa – Ainaro** (Km 23.60)
  No activity along this section.

- **Comoro – Dili substation (Becora)** (Km 9.45)
  The contract for this work has been signed on 12 August 2011 with the Indonesian contractor bps PT BANGUN PRIMA SEMESTA.
  The Contractor started the installation of the poles from Dili Substation in the direction of feeder No. 2 and No. 4, subsequently feeders No.1 and 6 will be connected and after that feeders No. 3 and 5.
  On 24 November 2011 feeders 2 and 6 have been energized, while feeder 1 has been energized throughout Liquica substation.

**B) Puri Akraya Engineering Limited – Power Plants in Hera and Betano.**

**Contract No. RDTL 10004115.**

The most important event to be recorded for the month of November is the **achievement of the target <Inaugural Ceremony of Hera Power Plant on 27th November 2011>.** This historical ceremony was attended by all Authorities, foreign dignitaries and the Guest of Honor was H.E. the President of RDTL Dr. Jose Ramos Horta who at midnight pressed the button to connect Hera power Plant with Dili distribution network, for the first time about 50% of Dili was illuminated with electricity produced by Hera Power Plant.

Others events of the month are:
- Continuous presence of H.E. Prime Minister Kay Rala Xanana Gusmao in Hera during the nights of 6-7-8 November to witness the hauling of the engines into the power house.
- The visit to Hera Power plant of H.E. the President of RDTL Dr. Jose Ramos Horta on November 10\textsuperscript{TH}
- Farewell ceremony held in EDTL place on November 16th for 20 Timorense mechanical engineers going to Finland for short period of training in Wartsila head quarter.

**HERA Power Plant**

Chronicle of the events:
- 07-11-2011 After several attempt the first engine was successfully transported into the power plant, running test was performed on 18-11-2011
- 08-11-2011 the second engine was transported into the power plant, running test was performed on 19-11-2011.
- 09-11-2011 the third engine was transported into the power plant, running test was performed on 20-11-2011. this running test was witnessed by two special guests H.E. the Prime Minister Kay Rala Xanana Gusmao and H.E the Minister of Finance Emilia Pires.
- 12-11-2011 the fourth engine was transported into the power plant, running test was performed on 22-11-2011.
- 14-11-2011 the fifth engine was transported into the power plant, running test expected to be performed on 09 -12-2011.
- 15-11-2011 the sixth engine was transported into the power plant, running test expected to be performed on 16-12-2011.
- The 150 KV switchyard with the first step-up 110 MVA transformer was energized on 24 November 2011 simultaneously with the power grid Hera-Dili-Liquica. The second transformer is expected to be energized by mid of December 2011.
The activity at site during the month of November was planned in a very precise and professional manner, thus leading to the successful target of November 27, 2011.

Progress on Foundation 81.32 %
Progress on Building Works 97.07 %
Progress on Mechanical installation 96.52 %
Progress on Electrical installation 96.84 %
Overall progress of the Power Plant 83.64 %
Progress on Switchyard civil work 93.86 %
Progress on Switchyard electrical work 84.43 %
Overall progress on the Switchyard 90.18 %

Work completed during the month of November:

Main Plant
- Transportation of the six engines inside the plant.
- Transportation of three generators inside the plant.
- Mechanical installation of six engines.
- Mechanical and electrical installation of three generators.
- Piping, air system, instrumentation, fuel system, exhaust gas system, cooling system and ventilation system.
- Electrical cables, panels and instrumentation.
- Electrical pre-commissioning and testing.
- Synchronization of generators set to the power grid.

Switchyard
- Erection of steel structures.
- Transformer installation.
- Primary equipment installation.
- Indoor equipment.
- Cable supports and cabling

Work ongoing:

Main Plant
- Rain water ditches, roads works, street lighting.
- Gravel paving.
- Workshop finishing works and electrification
- Exhaust gas ducts of engines 5-6-7.
- HVAC system in electrical building.
- Flexible connection of engines 5-6.
- Platform of engines 5-6.

Switchyard
- Fence and gate installation.
- Final backfilling and gravel paving.
- Control building some painting.
- Transformers fire walls finishing works.
- Cable supports and tray system.
- Lighting protection system and grounding.
- Cable pulling and termination works.
- Testing and commissioning.

Materials arrived at site during the month:
- Some missing and replacement parts which were sent by air cargo, but not affecting the commissioning and running of the power plant.
Documents submitted to the Consultant for review:
- Electrical details drawings of the switchyard.
- Start-up procedure for the power plant and power grid.

Manpower deployed at site during the month of September:
- Management / Staff 83 persons (expats).
- Management / Staff 34 persons (local)
- Workers skilled 249 persons (expats).
- Local workers 105 persons.

**BETANO Power Plant**
- Preliminary drawings of the plant are under preparation.
- Drawings of embankment level, drainage canals and boundary wall are not submitted yet as it was promised by the Contractor.

*The performance of the Contractors PAE / Wartsila / Vika / ABB during the month of November in the overall was very good.*

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

The activity at site is proceeding normally in accordance to the time schedule.

The overall progress achieved during the month of November is 94.65%.

The Contractor is working on site with the following manpower:
- Project Management No. 14 Chinese.
- Site works No. 137 Chinese workers and No. 40 Timorese workers.

The major works done during the month of November are as follow:
- Walls plastering of Water pump house completed.
- Roofing of oil pump house completed.
- Plastering of walls in main power house completed.
- Cable trench from main transformer to feeders 3 and 4 completed.
- Installation of daily fuel tank completed.
- Installation of all Auxiliary modules done.
- Engines 1 and 2 transported and positioned inside the power house.
- Cooling tower assembled.
- Main transformer assembly completed.
- Electrical distribution panels, control panel installed inside the control room.
- Assembly and welding of fuel tank No.1 completed.

Drawings submitted, revised and approved by the Consultant:
- Rebar of emergency oil sump.
- Electrical drawings revised.
- Fire protection system
- Revise cable laying drawings.
- Revised water piping installation drawings.
- Installation details of cooling water system.
- Mechanical installation revised drawings.

*The performance of the Contractor CSI and the quality of the workmanship is good.*
D) Bps PT BANGUN PRIMA SEMESTA – Engineering, Procurement and Construction of the 20KV Over Head Line Connecting the new 150/20KV Dili Substation with the Existing six (6) 20KV Feeders of Comoro Power Plant

The Contractor during this month of November is trying to complete the connections between 20 KV feeders of Dili substation with the nearest existing feeders in Dili. The work appeared to be more harder than what expected due to the urban obstacles and the presence of large size trees.

By 27 November 2011 only feeders No. 2 and 6 were connected and successfully energized. Feeders No. 3-4-5 are expected to be connected by mid of December.

This contract shall be amended in accordance to the quantity of materials effectively installed:

- Contract No. RDTL 11004369  Value US $ 1,326,900.75
- Expected revised scope of work  Value US $ 933,000.00
- Expected new Total Amount  US $ 2,259,900.75
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: November 09, 2011

Participants:

EDTL
Mr. Roberto Manuel Marcal (EDTL Project Manager)
Mr. Paulino Pinto (Power Plant Engineer)
Mr. Francisco Soares Pica (Substations Engineer). Not attending.
Mr. Faustino Andre (Substation Engineer). Not attending
Mr. Gilberto Siguera (Transmission lines Engineer). Not attending
Mr. Jaime Camacho (Power Plant Engineer). Not attending
Mr. Claudio Da Cruz Pereira (Substation Engineer). Not attending
Mr. Denis Consencao (Substations Engineer). Not attending
Mr. Jose Antonio Baba (Transmission Line Engineer). Not attending
Mr. Felismino Amnak (Substation 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. Francisco Pedigral (Safety Engineer). Not attending
Mr. Giampaolo Pilia (Electrical Engineer)
Mr. Vincenzo Mauger (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).
Mr. Zhang Ming Ping (Transmission Line Manager). Not attending
Mr. Ye Jingxing (electrical engineer). Mr. Li Rui (Design Institute).
Mr. Peng Liwei (Interpreter).
Mr. Liu Jie (Electrical Engineer). Not attending
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).
Mr. Zhu (Oil Tanks Engineer). Not attending
Mr. Wu Jun (Transmission line supervisor). Not attending
Mr. Liu Jian Puo (Safety Engineer). Not attending
Mrs. Dina (Interpreter). Not attending
Mr. Li Lei (Interpreter).
Mr. Zhao (Transmission Line Engineer).
Mr. Cai Hui (Safety Officer)
Mr. Li XianJian (Interpreter).
Mr. Yan Fuan (Electrical Engineer)
Subject of the meeting: Coordination of the works

Agenda of the present meeting:
1) General Notes
2) Comments on the last minute of meeting dated October 03, 2011.
3) Progress of works.
4) Delivery status of materials and equipment.
5) Drawings and technical specifications.
6) Insurance policy
7) Payment
8) Environment
9) Questions

1) General Notes
a) This is the first coordination meeting after the one held on October 03, 2011 due to other commitment by the Consultant.
b) The Consultant’s Project Manager announced that the President of the Republic H.E. Ramos Horta will make an official visit tomorrow morning November 10 at 08 a.m. to Hera power plant and to Dili Substation. The Contractor is invited to arrange for the President a good reception in Dili substation.

2) Comments on the last minute of meeting dated October 03, 2011
EDTL remarks
None
CNI22 remarks
None
No comments from the Present
Everybody present in the meeting are reminded that the <no comments> it means that the content of the minute of the previous meeting is approved.

3) Progress of the works
Transmission lines.
The overall situation is summarized in the following table:

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<th>excavation</th>
<th>concrete</th>
<th>Tower erection</th>
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From October 03, 2011 to November 09, 2011 (37 days), the progress achieved is as follows: 4.2 excavations per day, 3.6 concrete foundations per day, 1.7 towers erected per day, 4.2 towers of stringing of conductors per day.

The present progress, while showing a satisfactory number of foundations done, remains very low for the towers' erection.

The Contractor should focus on increasing the number of erectors' teams otherwise stringing of conductors' teams may catch up all the erected towers and then remain idle.

HERA – DILI (9.891 KM - No. 30 towers)

Stringing of conductors from tower 30 up to the gantry of Dili substation has been completed. Connection of tower No. 1 to the Gantry of Hera Switchyard can be done as from Friday November 11, ABB is now completing the erection of the gantries.

Other works remaining to be done: Cutting of dangerous trees, modification of the phases between tower No. 30 and Gantry, concrete caps on the Anchor bolts, fixing of the lock nuts on all the bolts (required to compensate for the flat washers), installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates and minor works of soil adjustment around foundations, testing and commissioning.

DILI – LIQUICA (38.818 KM – 87 towers)

All the towers are erected. Stringing of conductors from Gantry of Dili substation up to the gantry of Liquica substation has been completed.

Other works remaining to be done: Cutting of dangerous trees, fixing of Jumpers in some angle towers, concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, cutting of trees, testing and commissioning.

HERA - MANATUTO (40.902 Km - 91 towers)

The towers erection has been completed. The stringing of the conductors has been completed.

Connection of tower No. 1 to the gantry of Hera switchyard can be done as from Friday November 11, ABB is now completing the erection of the gantries.

Other works remaining to be done: Cutting of dangerous trees, concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, cutting of trees, testing and commissioning.

MANATUTO – BAUCAU (52.329 Km -132 towers)

Towers erection has been completed. The stringing of the conductors has been completed including the connection to substation gantry of Manatuto, remains the connection of Baucau substation.

Other works remaining also to be done: Cutting of dangerous trees, concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, cutting of trees, testing and commissioning.

BAUCAU – LOS PALOS (63.499 KM – 143 towers)

The excavation work and concrete of all towers' foundations have been completed.
Towers erection has been completed. Stringing of the conductors is done in 119 towers, and 24 towers remain to be done. The completion date stated to be the end of October 2011 has been now shifted to November 16. All others finishing works remain to be done.

**BAUCAU – VIQUEQUE (43.125 KM – 108 towers)**
The excavation works and concrete works have been completed. Towers erection has been done in 97 towers (89.8% of the total). The stringing of the conductors has been done in 87 towers (80.5% of the total).

**LIQUICA – MALIANA (44.921 KM – 109 towers)**
Work done by Indonesian Company THEATE.
Excavation completed is done in 89 tower foundations (81.6% of the total). Concrete completed is done in 78 tower foundation (71.5% of the total). Tower erection has been done in 10 towers (9.1% of the total). The Consultant remarked that the progress in this section of line is too slow.

**MALIANA – SUAI (57.62 KM – 134 towers)**
Work done by Indonesian Company THEATE.
Excavation works is done in 21 tower foundations (5.9% of the total). Concrete works is done in 18 tower foundations (about 33% of the total).

**SUAI- CASSA (38.555 KM – 98 towers)**
No activity is reported along this section of line.

**CASSA- BETANO (24.104 KM – 54 towers, provisional quantity)**
Excavation works is done in 21 tower foundations (about 38% of the total). Concrete works is done in 18 tower foundations (about 33% of the total).

**BETANO - VIQUEQUE (83.391 KM – 196 towers, provisional quantity)**
The excavation work is done in 121 tower foundations (about 62% of the total). The concrete has been done in 111 tower foundations (about 56% of the total). The temporary jetty that the Contractor was constructing in Betano bay to be used as landing place for the barges during transportation of steel structures and transmission line materials has been washed away by the waves and abandoned. Materials is now transported by land.

**VIQUEQUE – LOSPALOS (103 439 KM - 233 towers)**
The excavation works is done in 187 tower foundations (80.2% of the total). The concrete has been done in 157 tower foundations (67.4% of the total). Towers erection completed 42 towers (18.0% of the total).

**Substations**

**DILI SUBSTATION**
Works remaining to be done before energizing:
- Submittal of the commissioning protocol.
- Civil works punch list with all defects to be repaired.
- Electrical works punch list with all defects to be repaired.
- Connection and cabling of the Dispatching Centre equipment.
- Electrical installation inside the Pump house.
- Installation of all air conditioning system.

**MANATUTO SUBSTATION**
Works remaining to be done before energizing:
- Submittal of the commissioning protocol.
- Civil works punch list of all defects to be repaired.
- Electrical works punch list with all defects to be repaired.
- Installation of communication equipment inside the Main Control Building to be completed.
- Installation of all air conditioning system.

**BAUCAU SUBSTATION**
The works remaining to be done still are quite extensive:
- The main control building painting and ceiling to be done 50%.
- In the 20 KV Building complete painting work inside and outside to be done.
- In the 150KV area installation of grounding network is in progress.
- Pump house, finishing works 50% completed.
- Main cable trench 90% done.
- Sewage treatment system 90% done.
- Guard house, finishing works in progress.
- Fencing masonry wall is done 440 M.
- Water drainage completed 350 M.
- Erection of all steel structures 50% completed.
- Grounding network 60% completed.
- Outdoor water supply 30% completed.

**LOSPALOS SUBSTATION**
The works remaining to be done still are quite extensive:
- Drain ditch outside the boundary wall 400 Meters done.
- Main control building, internal finishing works including installation of window and door is 50% done.
- 20KV building, internal finishing works 50% completed.
- The installation of all steel structures is done 90%.
- Pump house completed 85%.
- The guard house completed 90%.
- Grounding network of the total substation 90% is done.
- Installation of electrical equipment in 150 KV area is 50% done.
- Installation of transformer 50% is done.
- Installation of capacitor bank 80% is done.
- 20 KV switchgear inside the building installed.
- Cable supports inside the cable trench 90% installed.
- Water supply pipes 80% installed.

**LIQUICA SUBSTATION**
Works remaining to be done before energizing
- Submittal of commissioning protocol.
- Civil works punch list of all defects to be repaired.
- Electrical works punch list of all defects to be repaired.
- Installation of all communication equipment inside Main Control building to be completed.
- Installation of all air conditioning System.

**MALIANA SUBSTATION**
Civil works is progressing slowly.
- Main Control Building, concrete structures are completed, brick walls to be started.
- 20 KV building concrete structures are completed brick walls to be started.
- Guard house concrete structure is done.
- Support foundations on 150KV area are all done.
- Foundations of the capacitor bank are completed.
- Main cable trench excavated for 150M and 100M concreted on the bottom slab.
SUAI SUBSTATION
- No activity is reported. Land owners are still waiting for compensation of the trees to be cut.
  The Contractor cannot mobilize.

CASSA SUBSTATION
- Excavation of the Main Control building is almost completed.
- Excavation of the fencing wall is completed and placing of lean concrete started.
- Construction of the retaining wall has started.

VIQUEQUE SUBSTATION
Civil works in progress
- Plastering of the fence brick wall is completed.
- In the Main Control building the plastering of walls is done and construction of indoor cable trench is done, electrical conduits are also installed.
- In the 20 KV building the plastering of the walls is done and the construction of indoor cable trench is done, electrical conduit are also installed.
- Fire fighting pool, construction is completed.
- Pump house, brick walls and plastering completed
- Guard house, brick walls and plastering completed.
- Foundations of 150 KV structures and of all supporting structures are completed. Drainage pipes 70% installed.
- Main cable trench 80% completed.
- Foundations of capacitor bank are completed.

Hera Power Plant
The construction of the Oil Tanks is substantially completed.
- The calibration of the volume of each tank remains to be done.
- The masonry work of the access stair case outside the fire walls is in progress.

20 KV distribution lines
The work is on going in the section Dili Substation-Alieu-Gleno, but at the present stage the completion schedule foreseen by end of September 2011 is very much in delay.
- Dili – Seloi, 634 poles have been installed (total quantity 634), stringing done in 33 poles.
- Seloi – Gleno, 351 poles have been installed (total quantity 440)
- Seloi – Aileu, 128 poles have been installed (total quantity 128), stringing done in 16 poles.
The Contractor is strongly advise to send a team of 20 Chinese workers to help the subcontractor in pulling and fixing the cables.
This line must be completed by 27 November 2011.

4) Delivery of Material and Equipment
The situation of material delivery is monitored from what it is stated in the weekly reports. All the major electrical equipment are stored in Dili and in Hera waiting to be transported on the relevant substations.
Major items which are not shipped yet from China are:
- OPGW, Hardware and Fittings for Maliana-Suai-Cassa-Betano-Viqueque-Lospalos transmission lines.
- Electrical Materials for Maliana, Suai, Cassa and Viqueque substations.
- The most critical items which are now urgently required are the safety apparatus to be installed in the substations of Dili, Manatuto and Liquica before energizing.

5) Drawings and technical specifications
Drawings submitted recently are related to:
- Foundations works of Cassa – Betano – Viqueque -Lospalos Transmission line
- Communication system for Maliana – Suai – Cassa - Viqueque substations.
- Civil work drawings of Sewage treatment Plant for Cassa and Suai substations.
All these drawings have been revised and approved or approved with comments by the Consultant.
6) Insurance
Situation unchanged. All Risk Policy covering any damages which may occur on the site to materials, equipments and personnel has never been submitted. The Contractor eventually will bear all the consequences and costs.

7) Payment
The interim payment certificates No.17 for the month of July and No. 18 for the month of August have been paid, the certificate No.19 for September has been submitted and is in process.

Environment & Safety
The situation remains constantly the same as previous months with little improvement.

8) Questions
The Consultant requested the CNI22 to submit the list with names and qualification of the Operators intended to be deployed on the substations of Dili, Liquica and Manatuto, Chinese operators as well as Timorenses operators which returned from the three months training period in China.

CNI22 stated that on November 13 operators from NRE will arrive in Dili from China to take over the situation.

The present meeting started at 15:00 and ended at 18:30.
Next meeting is scheduled by November 23, 2011 in Hera at 14:30.
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.
Scanned and excerpted by La’o Hamutuk.

(pages 32-40 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: November 23, 2011
Participants:

EDTL
Mr. Roberto Manuel Marcal (EDTL Project Manager) Not attending
Mr. Francisco Soares Pica (Substations Engineer). Not attending.
Mr. Faustino Andre (Substation Engineer). Not attending
Mr. Claudino da Cruz Pereira (Substation Engineer). Not attending
Mr. Denis Consencaco (Substations Engineer). Not attending
Mr. Jose Antonio Bobo (Transmission Line Engineer).
Mr. Araujo Lemos Sarmento (Transmission Line Engineer).
Mr. Felismino Amnak (Substation 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. Francisco Pedigral (Safety Engineer).
Mr. Giampaolo Pilia (Electrical Engineer).
Mr. Vincenzo Maugeri (Electrical Engineer). Not attending

CONTRACTOR CNI22
Mr. Li Tao (Project Manager). Not attending
Mr. Wu Yong Jun (Chief Engineer).
Mr. Hung Kaifu (Chief engineer for Hera power plant). Not attending
Mr. Zhang Ming Cun (Substation Manager).
Mr. Zhang Ming Ping (Transmission Line Manager). Not attending
Mr. Ye Jingxing (electrical engineer).
Mr. Li Rui (Design Institute). Not attending
Mr. Peng Liwei (Interpreter). Not attending
Mr. Liu Jie (Electrical Engineer). Not attending
Mr. Jiang Pei Yun (Transmission Lines Dep. Manager).
Mr. Xiao Yali (Transmission line Engineer). Not attending
Mr. Jiang Yan (Transmission Line Engineer).
Mr. Zhu (Oil Tanks Engineer). Not attending
Mr. Wu Jun (Transmission line supervisor). Not attending
Mr. Liu Jian Puo (Safety Engineer). Not attending
Mrs. Dina (Interpreter). Not attending
Mr. Li Lei (Interpreter). Not attending
Mr. Zhao (Transmission Line Engineer).
Mr. Cai Hui (Safety Officer)
Mr. Li Xianjian (Interpreter).
Mr. Yan Fuan (Electrical Engineer). Not attending
Mr. Xu Jun Hua (Chief engineer)
Ms. Jiang Fei (Interpreter).
Mr. Hy Xyewn (Transmission Line Manager).
Mr. Cheng Owan Wei (Electrical Engineer)
Subject of the meeting: Coordination of the works

Agenda of the present meeting:
1) General Notes
2) Comments on the last minute of meeting dated November 09, 2011.
3) Progress of works.
4) Delivery status of materials and equipment.
5) Drawings and technical specifications.
6) Insurance policy
7) Payment
8) Environment
9) Questions

1) General Notes
   a) The Consultant is informing all the present that the line Hera — Dili and Dili substation will be energized tomorrow morning November 24, 2011, and is also asking if the line is ready. The Contractor states that the line is ready, but in reality the line cannot be considered completed since many items are not installed yet. Anti-climbing Devises and Danger Plates are the most urgently required items and to have the line energized without them is a very high risk that the Contractor should be aware of.
   b) The Consultant remarked that the local newspapers of today highlighted the news that the north coast from Liquica to Lospalos shall be fully energized as from November 27 and invited the Contractor to be ready to face negative consequences due to the fact that Baucau and Lospalos substations are not ready. The Contractor stated once more that the two substations of Baucau and Lospalos will be energized before Christmas.

2) Comments on the last minute of meeting dated November 09, 2011
   EDTL remarks
   None
   CNI22 remarks
   None
   No comments from the Presents
   Everybody present in meeting are reminded that the <no comments> it means that the content of the minute of the previous meeting is approved.

3) Progress of the works

Transmission lines.

The overall situation is summarized in the following table:

<table>
<thead>
<tr>
<th>Section</th>
<th>excavation</th>
<th>concrete</th>
<th>Tower erection</th>
<th>Stringing conductors</th>
<th>Total number</th>
<th>KM</th>
</tr>
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<tbody>
<tr>
<td>Hera-Dili</td>
<td>30</td>
<td>30</td>
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<td>Hera-Manatuto.</td>
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<td>91</td>
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<td>91</td>
<td>40.90</td>
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<tr>
<td>Manatuto-Baucau</td>
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<td>132</td>
<td>132</td>
<td>132</td>
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<tr>
<td>Baucau-Lospalos</td>
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<td>143</td>
<td>143</td>
<td>143</td>
<td>143</td>
<td>63.50</td>
</tr>
<tr>
<td>Dili-Liquica</td>
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<td>87</td>
<td>87</td>
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<td>38.82</td>
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<td><strong>North Coast Total</strong></td>
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<td><strong>483</strong></td>
<td><strong>483</strong></td>
<td><strong>483</strong></td>
<td><strong>483</strong></td>
<td><strong>205.44</strong></td>
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<tr>
<td>Baucau-Viqueque</td>
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<td>107</td>
<td>97</td>
<td>87</td>
<td>108</td>
<td>43.13</td>
</tr>
<tr>
<td>Liquica-Maliana</td>
<td>99</td>
<td>82</td>
<td>21</td>
<td></td>
<td>109</td>
<td>44.92</td>
</tr>
<tr>
<td>Maliana-Suai</td>
<td>10</td>
<td>5</td>
<td></td>
<td></td>
<td>134</td>
<td>57.62</td>
</tr>
<tr>
<td><strong>East-West Total</strong></td>
<td><strong>216</strong></td>
<td><strong>194</strong></td>
<td><strong>118</strong></td>
<td><strong>87</strong></td>
<td><strong>351</strong></td>
<td><strong>145.67</strong></td>
</tr>
</tbody>
</table>

...
From November 09, 2011 to November 23, 2011 (14 days), the progress achieved is as follow: 2.7 excavations per day, 2.5 concrete foundations per day, 3.71 towers erected per day, 1.7 tower of stringing of conductors per day.

The present progress shows a satisfactory number of towers erected while the foundations work remains relatively low.

The Contractor should focus to increase the number of teams for the foundation work for the reason that the rain season is approaching otherwise all other activities of tower erection and stringing of conductors are going to be affected.

HERA – DILI (9.891 KM - No. 30 towers)

Stringing of conductors from gantry of Dili substation up to the gantry of Hera switchyard is now completed.

Connection of tower No. 1 to the Gantry of Hera Switchyard has been done.

Modification of the phases between tower No.30 and Gantry has been done.

Works remaining to be done after energizing: concrete caps on the Anchor bolts, fixing of the lock nuts on all the bolts (required to compensate for the flat washers), installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, testing and commissioning.

DILI – LIQUICA (38 818 KM – 87 towers)

Stringing of conductors from Gantry of Dili substation up to the gantry of Liquica substation has been completed with Jumpers installation on angle towers.

Other works remaining to be done are: concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, testing and commissioning.

HERA - MANATUTO (40.902 Km - 91 towers)

The stringing of the conductors is now completed from the gantry in Hera switchyard up to the gantry in Manatuto substation.

Connection of tower No. 1 to the gantry of Hera switchyard has been done.

Other works remaining to be done are: concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, cutting of trees, testing and commissioning.

MANATUTO – BAUCAU (52.329 Km -132 towers)

Towers erection is completed.

The stringing of the conductors has been completed including the connection to substation gantry of Manatuto, remains the connection from the terminal tower to the gantry of Baucau substation.

Other works remaining to be done are: Cutting of dangerous trees, concrete caps on the Anchor bolts, installation of Anti-climbing devices, Danger plates, Phase plates, Number and Name plates, adjustment of soil around foundations, testing and commissioning.
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.
Scanned and excerpted by La'o Hamutuk.

BAUCAU – LOS PALOS (63.499 KM – 143 towers)
Towers erection is completed.
Stringing of the conductors has been completed from tower No. 1 to tower No. 132.
Works remaining to be done are: connection from terminal towers to the gantries in Baucau and
Lospalos substations, cutting of dangerous trees, concrete caps on the Anchor bolts, installation of
Anti-climbing devises, Danger plates, Phase plates, Number and name plates, adjustment of the
soil around foundations, testing and commissioning.

BAUCAU – VIQUEQUE (43.125 KM – 108 towers)
The excavation works and concrete works have been completed in 107 towers.
Towers erection remains, as previously, done in 97 towers (89.8% of the total).
The stringing of the conductors remain, as previously, done in 87 towers (80.5% of the total).
The teams working on these section of line have been sent to make final inspection and rectification
on Hera –Dili – Liquica and Hera –Manatuto lines before energizing..

LIQUICA – MALIANA (44.921 KM – 109 towers)
Work done by the Indonesian Company THEATE
Excavation completed is done in 99 tower foundations (90.8 % of the total).
Concrete completed is done in 82 tower foundation (75.2 % of the total).
Tower erection has been done in 21 towers (19.2 % of the total).
The Consultant remarked that the progress in this section of line continues to be too slow.

MALIANA – SUAI (57.62 KM – 134 towers)
Work done by Indonesian Company THEATE.
Excavation works is done in 10 tower foundations (7.4 % of the total)
Concrete works is done in 5 tower foundations (3.7 % of the total)

SUAI- CASSA (38.555 KM – 98 towers)
Work shall be done by Indonesian Company THEATE.
No activity is reported along this section of line.

CASSA- BETANO (24.104 KM – 54 towers, provisional quantity)
Excavation works is done in 28 tower foundations (about 51.8 % of the total).
Concrete works is done in 25 tower foundations (about 46.2 % of the total).

BETANO - VIQUEQUE (83.391 KM – 196 towers, provisional quantity)
The excavation work is done in 131 tower foundations (about 66.8 % of the total)
The concrete has been done in 117 tower foundations (about 59.7 % of the total).
The tower erection has been done in 27 towers (about 13.8 % of the total).

VIQUEQUE – LOSPALOS (103.439 KM - 233 towers)
The excavation works is done in 196 tower foundations (84.1 % of the total).
The concrete has been done in 172 tower foundations (73.8 % of the total).
Towers erection completed 78 towers (33.4 % of the total).

Substations

DILI SUBSTATION
The substation is substantially completed and is ready to be energized.
Works remaining to be done:
- Repairs of civil works defects mentioned in the punch list.
- Repairs of electrical works defects mentioned in the punch list.
- Dispatching Centre to be made operational.
- Electrical installation inside the Pump house.
MANATUTO SUBSTATION
The substation is substantially completed and is ready to be energized.: Works remaining to be done:
- Repairs of civil works defects mentioned in the punch list.
- Repairs of electrical works defects mentioned in the punch list.

BAUCAU SUBSTATION
The works remaining to be done still are quite extensive (Energizing the substation before Christmas remains very difficult unless the Contractor works in three shifts):
- The main control building painting and ceiling is done 85%, installation of windows and doors completed.
- In the 20 KV Building complete painting work inside and outside is done 80% installation of windows and doors completed.
- In the 150KV area installation of supporting steel structures is 80% done.
- Pump house, doors and windows installed, water pumps installed, painting and roof insulation completed.
- Main cable trench 92% done,
- Sewage treatment system 95% done.
- Guard house, finishing works 90% done.
- Fencing masonry wall is done 95% and painting 75% is done.
- Water drainage completed 350 M. and water supply completed 150 M
- Erection of all steel structures 50% completed.
- Grounding network 65% completed.
- Outdoor water supply 150 M completed.
- Fire alarming system 50% done.
- Assembly of main transformer 90% done.

LOSPALOS SUBSTATION
The Works remaining to be done still are quite extensive (Energizing the substation before Christmas remains very difficult unless the Contractor works in three shifts):
- Drain ditch outside the boundary wall 400 Meters done.
- Main control building, external and internal finishing works including installation of window and doors and painting etc. is 90% done.
- 20KV building, external and internal finishing works including painting, installation of windows and doors 80% completed.
- The installation of all steel structures is done 90%.
- Pump house completed 90%.
- The guard house completed 95%.
- Grounding network of the total substation 90% is done.
- Installation of electrical equipment in 150 KV area is 70% done.
- Installation of main transformer 95% is done.
- Installation of capacitor bank 95% is done.
- 20 KV switchgear inside the building installed 95%.
- Cable supports inside the cable trench 90% installed.
- Water supply pipes 90% installed.

LIQUICA SUBSTATION
The substation is substantially completed and is ready to be energized. Works remaining to be done:
- Repair of civil works defects mentioned in the punch list.
- Repair of electrical works defects mentioned in the punch list.

MALIANA SUBSTATION
Civil works is progressing slowly.
- Main Control Building, concrete structures are completed, brick walls to be started.
- 20 KV building concrete structures are completed, brick walls to be started, internal cable trench under construction.
- Guard house bricks walls in progress.
- Pump house, concrete structure completed.
- Support foundations on 150KV area are all done.
- Foundations of the capacitor bank are completed.
- Main cable trench 60 M concreted.
- Sewage treatment system in progress.
- Emergency oil pit completed
- Fire fighting reservoir completed.

### SUAI SUBSTATION
- No activity is reported. Land owners are still waiting for compensation of the trees to be cut. The Contractor cannot mobilize.

### CASSA SUBSTATION
- Excavation of the Main Control building completed and lean concrete placed.
- Excavation of 20 KV building 50% completed.
- Excavation of the fencing wall is completed and placing of lean concrete started.
- Construction of the retaining wall has started, lean concrete placed.
- Main transformer foundation, lean concrete placed.

### VIQUEQUE SUBSTATION
Civil works in progress
- In the Main Control building finishing works 80% done.
- In the 20 KV building finishing works 80% done.
- Fire fighting pool, construction is completed.
- Pump house, Finishing works 70% done
- Guard house, Finishing works 70% done.
- Foundations of 150 KV structures and of all supporting structures are completed.
- Drainage pipes 90% installed.
- Main cable trench 90% completed.

### Hera Power Plant
- The construction of the Oil Tanks is substantially completed.
- The calibration of the volume of each tank using a precise quantity of water is in progress.

### 20 KV distribution lines
The work is ongoing in the section Dili Substation-Alieu-Gleno, but there is no planning of when this distribution line shall be completed.
- Dili – Seloi, 634 poles have been installed (total quantity 634), stringing done in 264 poles.
- Seloi – Gleno, 410 poles have been installed (total quantity 440), no stringing of conductors yet.
- Seloi – Aileu, 128 poles have been installed (total quantity 128), stringing done in 80 poles.

4) Delivery of Material and Equipment
The situation of material delivery is monitored from what it is stated in the weekly reports. All the major electrical equipment are stored in Dili and in Hera waiting to be transported on the relevant substations.

Major items which are not shipped yet from China are:
- OPGW, Hardware and Fittings for Baucau – Viqueque and Betano-Viqueque-Lospalos transmission lines.
- Electrical Materials for Maliana, Suai, Cassa and Viqueque substations.
- The most critical items which are now urgently required are the Anti-climbing device and the Danger Plates to be installed in Hera – Dili, Hera-Manatuto and Dili-Liquica transmission lines before energizing. No mention of these materials so far is made in the weekly report.
5) Drawings and technical specifications

Drawings submitted recently are related to:
- Communication system of Maliana, Suai, Cassa substations.
- As built drawings of Hera Oil Tanks.

All these drawings have been revised and approved or approved with comments by the Consultant.

6) Insurance

Situation unchanged. All Risk Policy covering any damages which may occur on the site to materials, equipments and personnel has never been submitted. The Contractor eventually will bear all the consequences and costs.

7) Payment

The interim payment certificates No.19 for September and No. 20 for October have been submitted and are in process. All previous certificates have been paid.

The Contractor is claiming that the retention money of 2% made by the Treasury in each interim payment certificate is illegal against the contract condition, Consultant fully agreed on this and the issue has to be clarified with the Ministry of Finance.

8) Environment & Safety

The situation remains constantly the same as previous months with little improvement.

9) Questions

The Consultant requested the Contractor to pay more attention on the operation of stringing of the conductors, the quality of the workmanship is not yet up to the required standard, apparently the supervisors are not very keen to walk along the line.

The Consultant remarked the carelessness of the stringing team by showing pictures of cable drums abandoned along the river bed and washed away by the recent heavy rain.

Contractor kept silent.

The present meeting started at 15:00 and ended at 18:30.

Next meeting is scheduled by December 06, 2011 in Hera at 14:30.
Minutes of Meeting

Contract Title: Hera Power Plant 120 MW 7 x W18V46  
Project: P / 10045  

Subject: 19th coordination meeting  
Place: Hera site office  
Date: 11.11.2011  
Time: 14:45 – 18:15  
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, no comments, considered to be approved by all participants

3 HSE
   - Concerning the 3 cable drums involved in the October 19th accident ABB is providing inspection and test in order to make sure that cables can be used
   - Signage to be installed around working area in engine hall to keep visitors on safe distance
   - Smoking, eating and sleeping in all working areas is prohibited
   - Dust control around Power House and EEB to be arranged

4 Engine #1 accident on the road on September 6th 2011
   - Preliminary insurance survey was conducted on 9th of September by the Loss Adjuster. The second insurance inspection was carried out on 16th of September by the independent investigator and engine damage assessor. Subsequently on 20th of September PAE obtained a clearance to remove all ancillary equipment ie. Trailer and the prime mover, damaged trailer parts etc. from the road which has been done. Concerning the engine the independent investigator team of 5 people consisting of two forensic experts, two engine damage assessors and one reinsurer’s representative and two Wartsila representatives and PAE as insured party were on site between October 17th and 19th. Due to the engine position it was possible only to open one window cover of one turbo charger which was found totally damaged.
   - The engine will be removed according to instruction issued by the insurance company. Meanwhile security guards are posted at accident site.
   - Additional protection with tarpaulin to be installed on the fallen engine as requested by the insurance company
   - The area in front of the engine has been prepared for the 600t crane which would be used to lift up the fallen engine
   - The method statement of the removal of the engine from the accident site was submitted to the loss assessors and this has as of date submitted to the insurers.
- The total cost of the removal of the engine will be borne by the insurance company
- The insurance group has started now negotiating the salvage value of the fallen engine with all parties including the OEM of the equipment
- The removal of the engine from the accident place has to be done in the shortest time possible to avoid continuous negative comments from the media and from Members of Parliament. Concerning replacement of engine no 7 in Hera the contractor will place a new order to the manufacturer as soon as all the formalities with insurance have been totally completed and approved, the owners requirement is that the engine no 7 should be on place as per the contractual conditions.
- The new transporter SDV-Yew Choon appointed by Wärtsilä has started operations of hauling the engines from Behau to Hera, as of today three units are successfully transported into the engine hall

5 Factory Acceptance Test (Fat)
- FAT’s for the Betano switchyard main transformer (2 units, 70/100 MVA step-up) is scheduled from 12th to 15th of November 2011 in Thailand. The test will be witnessed by the Consultant electrical engineer from Milano head quarters. Representative of EDTL may not attend due to time for visa requirements
## 6 Delivery, Procurement & Manufacturing Status

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### November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.
Scanned and excerpted by La’o Hamutuk.  Page 30

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### ABB SHIPMENT #

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<td>DC System (DCDB/110V dc/48Vdc)</td>
<td>TM</td>
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7 Update of site progress

SWITCHYARD CIVIL WORKS

- Switchyard
  - Backfilling and compaction: 90%
  - Excavations for oily water system: 100%
  - Oily water pit: 100%
  - Cable conduits: 100%
- Switchyard Control room
  - Structure: 100%
  - Finishing: 85%
- Switchyard Cable trenches
  - Concrete covers for trenches: 100%
  - Cable trench to EEB: 70%
- Below zero level earthing: 95%
- Perimeter drainage: 100%
- Fence: 20%
- Firewall: 30%
- Gravel surfacing: 1%

SWITCHYARD ELECTRICAL INSTALLATIONS

- Steel structure: 95%
- High voltage equipment: 75%
- Cable pulling and connection: 65%
- Stringing over head conductors: 0.5%
- Transformers (3 units): 75%

STEEL FRAME ERECTION & BUILDING WORKS OF MAIN PLANT

- Powerhouse
  - Steel frame: 99%
  - External walls: 85% (South side wall open due engine installation)

MECHANICAL INSTALLATIONS, MAIN PLANT, COMMON & DG SET 1-7

- Engine Hall and its Gen Set progress: 65%
- Lube oil system: 93%
- Compressed air system: 99%
- Cooling water system: 85%
- Charge air system: 85%
- Exhaust gas system: 75%
- Fire Fighting System: 98%
- Sludge System: 75%
- Fuel system: 98%
- Boilers: 75%
- Steam distribution: 94%
- Water treatment: 92%

MECHANICAL INSTALLATIONS, MAIN PLANT, COMMON & DG SET 1-3

- Engine Hall and its Gen Set progress: 88%
- Lube oil system: 98%
- Compressed air system: 98%
- Cooling water system: 98%
- Charge air system: 98%
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.  
Scanned and excerpted by La'o Hamutuk. 

- Exhaust gas system 98%
- Fire Fighting System 98%
- Sludge System 85%
- Fuel system 96%
- Boilers 96%
- Steam distribution 98%
- Water treatment 92%

**ELECTRICAL INSTALLATION, MAIN PLANT, COMMON & DG SET 1-3**
- Cable ladders 99%
- Installation of panels instrumentation and equipment 96%
- Cable pulling 92%
- Cable termination 88%
- Energizing panels 80%
- Electrical pre-commissioning 40%

**ELECTRICAL INSTALLATION, MAIN PLANT, COMMON & DG SET 4-7**
- Cable ladders 96%
- Installation of panels instrumentation and equipment 95%
- Cable pulling 53%
- Cable termination 48%
- Energizing panels 83%
- Electrical pre-commissioning 34%

**COMMISSIONING, MAIN PLANT, COMMON & DG SET 1-3: 4%**

8 Commissioning
- Commissioning procedures (Wärtsilä electrical) submitted. Engine startup procedures requested by PAE.
- Commissioning procedures from ABB submitted

9 O&M
- Draft of Station manuals already available in soft copy and submitted on November 11th

10 Technical matters

10.1 Civil
- The revised drawings for the drainage system to be submitted by November Monday 14th
- Clearing of CNI22 areas
  - part 1 completed
  - part 2 completed
  - part 3 TBA later by CNI22. The corridor for the pipeline 80% completed, rest would be done when required to install the pipeline
- A joint survey was carried out for fence and drainage line at CNI22 housing area. Wika to prepare by November 14th a layout showing the areas to be cleared by CNI22
- Expansion joints on the dyke wall to be sealed by CNI22 by November 30th

10.2 Mechanical
- Flexible connections to the storage tanks are recommended by the Consultant and PAE, installation completed except steam lines.
- Blind flanges for unused storage tank connections installed.
- The recommendation of the Consultant is to calibrate all fuel tanks Wika has submitted the calibration procedure and calibration company certificate; the calibrator is expected to arrive at Hera site on Tuesday November 15th, separate meeting concerning calibration issues on November 12th morning.
10.3 Electrical
- Regarding the double bus bar system Consultant, PAE and CMA / WFI had a meeting on 5th of September where the proposed sequence of the installation of double bus bar was discussed. The technical matter was approved. PAE is to provide detailed engineering drawings and cost to the Consultant and the Owner ASAP. On September 16th there was a follow up meeting with the Consultant, PAE and ABB regarding the construction of the cable pulling pit which is also a part of above work. The issue remains open.
- ABB calculations as per the new cable trench design have been submitted and approved by the Consultant

10.4 ABB Switchyard
- Concerning communication and control system meeting was held on 5th of August in China and the matter is clear for all involved parties,
- drawings/documents have been submitted to the Consultant for approval. A meeting with CNI22, PAE, ABB and NRE was held on 16th of September 2011. ABB has agreed to provide 4 pc of relays RCS931 as manufactured by NRE. This will not have any impact on the schedule and cost of the projects for the Owner. ABB will have these relays on the site on November 16th . ABB has confirmed that these equipment will be commissioned, tested and verified to be ready to energize on November 22’d
- On November 9th the consultant conducted site survey and witnessed use of inappropriate tools for erection of the steel structures. ABB is using handmade tools. For the whole switchyard area for 4 teams ABB is using 1 adjustable torque wrench.
- The construction contractor is required to mark all bolts that they are properly tightened.
- ABB provided the revised schedule of switchyard construction to the Consultant

10.5 Initial start-up
- The first meeting regarding the initial start-up procedures was on November 7th at Hera power plant. Participants were ABB, Wartsila, PAE, CNI22, NRE, EDTL, Manitoba and Consultant.
- Next meeting is on November 13th

11 Betano
- Site development plan is under preparation by WFI and ABB, will be submitted by the third week of November.
- New location for the jetty has been identified as more suitable for the power plant equipment just in front of the existing access road. Semi-permanent jetty needs to be built for usage of equipment transport.
- Single line diagrams and equipment drawings submitted by ABB have been commented by the Consultant and would be rectified as required.

12 Other issues
- Supply of fuel initial quantity already started and as of today 600m3 in stock
- Critical item list of tasks which may affect the final target of 27th of November is required ASAP.
- Engine 1-3 installation day and night
- ABB switchyard commissioning and testing on fast track
- The training for 20 EDTL engineers scheduled from 16th to 26th November in Wärtsilä Finland training center in Turku.

Next meetings
25.11.2011 at 14:30 at site in Hera
09.12.2011 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: 20th coordination meeting
Place: Hera site office
Date: 25.11.2011
Time: 14:30 – 17:15
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, no comments, considered to be approved by all participants

3 HSE
   – Concerning the 3 cable drums involved in the October 19th accident ABB is providing inspection and test in order to make sure that cables can be used, testing has been done 23.11.2011.
   – Signage has been installed around working area in engine hall to keep visitors on safe distance
   – Smoking, eating and sleeping in all working areas is prohibited
   – Dust control around Power House and EEB to be arranged

4 Engine #1 accident on the road on September 6th 2011
   – The insurance site surveys have been completed
   – The engine will be removed according to instruction issued by the insurance company. Meanwhile security guards are posted at accident site.
   – Additional protection with tarpaulin to be installed on the fallen engine as requested by the insurance company
   – The area in front of the engine has been prepared for the 600t crane which would be used to lift up the fallen engine
   – The method statement of the removal of the engine from the accident site was submitted to the loss assessors and this has as of date submitted to the insurers.
   – The insurance group has started now negotiating the salvage value of the fallen engine with all parties including the OEM of the equipment
   – The removal of the engine from the accident place has to be done in the shortest time possible to avoid continuous negative comments from the media and from Members of Parliament. Concerning replacement of engine no 7 in Hera the contractor will place a new order to the manufacturer as soon as all the formalities with insurance have been totally completed and approved, the owners requirement is that the engine no 7 should be on place as per the contractual conditions.
   – Owner requested a time schedule for the delivery of the engine no 7
5 Factory Acceptance Test (Fat)
   - FAT’s for the Betano switchyard main transformer (2 units, 70/100 MVA step-up) has been completed.

6 Delivery, Procurement & Manufacturing Status

   Remaining shipments

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7 Update of site progress

SWITCHYARD CIVIL WORKS

- Switchyard
  - Backfilling and compaction: 95%
  - Excavations for oily water system: 100%
  - Oily water pit: 100%
  - Cable conduits: 100%

- Switchyard Control room
  - Structure: 100%
  - Finishing: 90%

- Switchyard Cable trenches
  - Concrete covers for trenches: 100%
  - Cable trench to EEB: 85%

- Below zero level earthing: 98%
- Perimeter drainage: 100%
- Fence: 40%
- Firewall: 50%
- Gravel surfacing: 70%

SWITCHYARD ELECTRICAL INSTALLATIONS

- Steel structure: 100%
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.
Scanned and excerpted by La’o Hamutuk.  Page 36

- High voltage equipment 100%
- Cable pulling and connection 90%
- Stringing overhead conductors 95%
- Transformers (3 units) 100%

STEEL FRAME ERECTION & BUILDING WORKS OF MAIN PLANT

- Powerhouse
  - Steel frame 100%
  - External walls 90% (South side wall open due engine installation)

MECHANICAL INSTALLATIONS, MAIN PLANT, COMMON & DG SET 1-7

- Engine Hall and its Gen Set progress 91%
- Lube oil system 95%
- Compressed air system 99%
- Cooling water system 96%
- Charge air system 98%
- Exhaust gas system 85%
- Fire Fighting System 99%
- Sludge System 95%
- Fuel system 99%
- Boilers 75%
- Steam distribution 96%
- Water treatment 99%

MECHANICAL INSTALLATIONS, MAIN PLANT, COMMON & DG SET 1-3

- Engine Hall and its Gen Set progress 100%
- Lube oil system 100%
- Compressed air system 100%
- Cooling water system 100%
- Charge air system 100%
- Exhaust gas system 100%
- Fire Fighting System 100%
- Sludge System 99%
- Fuel system 99%
- Boilers 99%
- Steam distribution 99%
- Water treatment 99%

ELECTRICAL INSTALLATION, MAIN PLANT, COMMON & DG SET 1-3

- Cable ladders 99%
- Installation of panels instrumentation and equipment 97%
- Cable pulling 99%
- Cable termination 94%
- Energizing panels 95%
- Electrical pre-commissioning 65%

ELECTRICAL INSTALLATION, MAIN PLANT, COMMON & DG SET 4-7

- Cable ladders 96%
- Installation of panels instrumentation and equipment 95%
- Cable pulling 61%
- Cable termination 66%
8 Commissioning

- Engine start-up procedures are in operation manual which is part of station manuals which have been submitted last week.

9 O&M

- O&M personnel about 12 persons at site and 20 EDTL trainees expected on November 26th.

10 Technical matters

10.1 Civil

- The revised drawings for the drainage system submitted and consultants comments received. PAE will incorporate comments from the Consultant and resubmit to the Consultant.
- Clearing of CNI22 areas
  - The revised layout of part 3 will be submitted to the Consultant by November 29th
  - A joint survey was carried out for fence and drainage line at CNI22 housing area. Wika prepared a layout showing the areas to be cleared by CNI22, to be submitted to the Consultant after this meeting.
- Expansion joints on the dyke wall to be sealed by CNI22 by November 30th

10.2 Mechanical

- Flexible connections installation completed except steam lines, steam line flexible connections at site already.
- Storage tanks have been calibrated by CNI22 (3PC 5000m3 and 1PC 1000m3)
- Day tanks (HFO day and buffer, LFO day tank) have been calibrated by WIKA
- Level switches and manual level indicators still to be installed

10.3 Electrical

- Regarding the double bus bar system Consultant, PAE and CMA / WFI had a meeting on 5th of September where the proposed sequence of the installation of double bus bar was discussed. The technical matter was approved. PAE is to provide detailed engineering drawings and cost to the Consultant and the Owner ASAP. On September 16th there was a follow up meeting with the Consultant.

10.4 ABB Switchyard

- The construction contractor is required to mark all bolts that they are properly tightened. All bolts have been checked.
- The ratio test assessment of the step-down transformer has to be submitted by ABB to the Consultant on November 25th

10.5 Initial start-up

- Engine 1 running test done on November 18th
- Engine 2 running test done on November 19th
- Engine 3 running test done on November 20th (in the presence of the Prime Minister and Minister of Finance)
- Engine 4 running test done on November 22nd
- ABB step-up transformer no 3 was energized on November 24th including the 150 Kv power grid Hera-Dili-Liquica
- The energization with continuous operation will start as from November 26th at 10:00am

11 Betano

- During the kick-off meeting of June St’ 2011 in the time schedule is indicated that site preparations to be done during November 2011 and foundation civil work to be started in the
middle of December 2011. Soil investigation has been done in accordance with the schedule but all drawings related to site preparations, boundary wall construction, drainage channels and piling requirements have not been submitted up to the present time.
- WFI to submit above drawings to PAE Jakarta by December 2nd
- New location for the jetty has been identified as more suitable for the power plant equipment just in front of the existing access road. Semi-permanent jetty needs to be built for usage of equipment transport.
- Single line diagrams and equipment drawings submitted by ABB have been commented by the Consultant and would be rectified as required.

12 Partial handing over
- WFI requests that engines are handed over before commercial use
- PAE requests that performance tests for guaranteed values should be witnessed and signed by GOTL and Owners Consultant.
- PAE also requests that proportional total plant readiness should be used as a measure apart from purely engine numbers
- ABB switchyard: the work is substantially completed and provisional acceptance certificate should be issued based on guarantee documentation of the contract.
- The issue of partial handing over needs to be discussed in separate meeting

13 Other issues
- Supply of fuel initial quantity already started and as of today 1700m3 in stock The supply is done on daily average rate of 120m3/day
- The training for 20 EDTL engineers scheduled from 16th to 26th November in Wärtsilä Finland training center in Turku is ongoing.
- Construction of the jetty should be initiated ASAP as it is of imperative importance to the GOTL to maintain the economics of the operation

Next meetings
12.12.2011 at 14:30 at site in Hera
09.01.2012 at 14:30 at site in Hera

Prepared by: Kari Ruuth, CMA
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.

Scanned and excerpted by La’o Hamutuk.
4 S-CURVES

The original report contains 10 more similar graphs and tables for different components of the Hera plant and switchyard construction. La'o Hamutuk did not reproduce them here to keep the file size manageable.
**FINANCIAL PROJECT STATEMENT**

1.) **Contract with CNI22**


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 signed on 13 May 2011. The contract is reflecting the cancellation of the two power plants and is taking into consideration the works and various activities done in Hera from the mobilization, site preparation and the construction of the Oil Tanks.

The original Contract Value reduced Of US $ 91,038,377.00 is equal to US $ 276,092,847.00. This amount is increased as stated 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-drainage canal-fuel tanks construction etc.

Value of Amendment No. 3 is US $ 22,403,345,00

The new total contract price become US $ 298,496,192.00 In addition the amount of US $ 5,126,400.00 for Operation, maintenance and training of the Timorese personnel.

E.) **Disbursement Schedule:**

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

<table>
<thead>
<tr>
<th>Amount</th>
<th>Paid Date</th>
<th>Payment Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>US $ 10,000,000.00</td>
<td>Paid on April 2009</td>
<td>Against Bank Guarantee of same amount</td>
</tr>
<tr>
<td>US $ 10,550,000.00</td>
<td>Paid on December 2009</td>
<td>Against Bank Guarantee of US $ Twelve Million</td>
</tr>
<tr>
<td>US $ 1,450,000.00</td>
<td>Paid on February 2010</td>
<td>Covered by above Bank Guarantee</td>
</tr>
<tr>
<td>US $ 14,713,122.00</td>
<td>Paid on August 2010 , covered by the performance security of</td>
<td>US $ 36,713,122.00</td>
</tr>
</tbody>
</table>
90% of the new contract price US $ 268,646,572.80 to be paid to 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:

<table>
<thead>
<tr>
<th>Interim payment No.</th>
<th>Gross amount US$</th>
<th>Net Amount US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (March, 2010)</td>
<td>5,872,855.58</td>
<td>4,699,733.18 paid</td>
</tr>
<tr>
<td>2 (April, 2010)</td>
<td>4,117,847.41</td>
<td>3,294,319.58 paid</td>
</tr>
<tr>
<td>3 (May, 2010)</td>
<td>3,439,526.40</td>
<td>2,756,729.20 paid</td>
</tr>
<tr>
<td>4 (June, 2010)</td>
<td>800,321.83</td>
<td>640,257.46 paid</td>
</tr>
<tr>
<td>5 (July, 2010)</td>
<td>4,891,259.53</td>
<td>3,915,378.36 paid</td>
</tr>
<tr>
<td>6 (August, 2010)</td>
<td>5,569,325.60</td>
<td>4,456,218.22 paid</td>
</tr>
<tr>
<td>7 (September, 2010)</td>
<td>13,593,524.10</td>
<td>10,877,498.39 paid</td>
</tr>
<tr>
<td>8 (October, 2010)</td>
<td>10,454,635.75</td>
<td>8,374,646.12 paid</td>
</tr>
<tr>
<td>9 (November, 2010)</td>
<td>10,552,883.93</td>
<td>8,463,473.67 paid</td>
</tr>
<tr>
<td>10 (December, 2010)</td>
<td>9,449,125.16</td>
<td>7,572,389.75 Paid</td>
</tr>
<tr>
<td>11 (January, 2011)</td>
<td>8,723,373.58</td>
<td>6,993,451.33 Paid</td>
</tr>
<tr>
<td>12 (February, 2011)</td>
<td>3,221,828.39</td>
<td>2,577,562.86 paid</td>
</tr>
<tr>
<td>13 (March, 2011)</td>
<td>19,067,612.16</td>
<td>15,267,413.06 paid</td>
</tr>
<tr>
<td>14 (April, 2011)</td>
<td>3,996,415.36</td>
<td>3,197,519.17 Paid</td>
</tr>
<tr>
<td>15 (May, 2011)</td>
<td>45,536,799.34</td>
<td>36,464,812.22 Paid</td>
</tr>
<tr>
<td>16 (June, 2011)</td>
<td>9,976,644.27</td>
<td>7,993,041.62 paid</td>
</tr>
<tr>
<td>17 (July, 2011)</td>
<td>14,969,205.89</td>
<td>12,003,232.44 Paid</td>
</tr>
<tr>
<td>18 (August, 2011)</td>
<td>17,118,553.54</td>
<td>13,699,762.14 paid</td>
</tr>
<tr>
<td>19 (September, 2011)</td>
<td>11,349,268.85</td>
<td>9,079,970.24 paid</td>
</tr>
<tr>
<td>20 (October, 2011)</td>
<td>17,339,231.49</td>
<td>13,874,258.10 In Process</td>
</tr>
<tr>
<td>21 (November, 2011)</td>
<td>21,336,481.64</td>
<td>17,084,538.97 In Process</td>
</tr>
</tbody>
</table>

Total 241,376,719.80 193,286,206.07

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 (credited in the bank on January 02,2011) against a Bank Guarantee of same amount, 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 of same amount, 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 14\textsuperscript{th}, 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.

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.

The LC related to Hera Power Plant is made operative from April 21, 2011.

The amounts of money drawn from the LC during the month of June are as follow:

<table>
<thead>
<tr>
<th>INVOICE No.</th>
<th>INVOICE VALUE US $</th>
<th>ADVANCE AGAINST 40 Mil. Received US $</th>
<th>RETENTION US $</th>
<th>NET DRAWN from LC US $</th>
</tr>
</thead>
<tbody>
<tr>
<td>11601</td>
<td>3,893,663</td>
<td>Nil</td>
<td>Nil</td>
<td>3,893,663</td>
</tr>
<tr>
<td>11602</td>
<td>9,348,634</td>
<td>2,223,766</td>
<td>532,052</td>
<td>6,592,816</td>
</tr>
<tr>
<td>11603</td>
<td>5,117,937</td>
<td>1,217,407</td>
<td>291,273</td>
<td>3,609,257</td>
</tr>
<tr>
<td>11604</td>
<td>1,315,353</td>
<td>312,884</td>
<td>74,860</td>
<td>927,609</td>
</tr>
<tr>
<td>11606</td>
<td>1,236,174</td>
<td>294,050</td>
<td>70,353</td>
<td>871,771</td>
</tr>
<tr>
<td>11608</td>
<td>9,312,709</td>
<td>2,215,221</td>
<td>530,007</td>
<td>6,567,481</td>
</tr>
<tr>
<td>TOTAL month of June</td>
<td>30,224,470</td>
<td>6,263,328</td>
<td>1,498,545</td>
<td>22,462,598</td>
</tr>
<tr>
<td>11605</td>
<td>4,333,172</td>
<td>1,030,735</td>
<td>246,610</td>
<td>3,055,827</td>
</tr>
<tr>
<td>11710</td>
<td>46,521,748</td>
<td>11,066,161</td>
<td>2,647,658</td>
<td>32,807,929</td>
</tr>
<tr>
<td>11607</td>
<td>4,697,793</td>
<td>972,782</td>
<td>Nil</td>
<td>3,725,010</td>
</tr>
<tr>
<td>11609</td>
<td>1,800,960</td>
<td>428,395</td>
<td>102,497</td>
<td>1,270,068</td>
</tr>
<tr>
<td>11712</td>
<td>1,077,300</td>
<td>256,258</td>
<td>61,312</td>
<td>759,730</td>
</tr>
<tr>
<td>11713</td>
<td>34,891,311</td>
<td>8,299,621</td>
<td>1,985,743</td>
<td>24,605,947</td>
</tr>
<tr>
<td>TOTAL month of July</td>
<td>93,322,284</td>
<td>22,053,952</td>
<td>5,043,820</td>
<td>66,224,511</td>
</tr>
<tr>
<td>11711</td>
<td>26,455,514</td>
<td>6,292,992</td>
<td>1,505,643</td>
<td>18,656,879</td>
</tr>
<tr>
<td>11714</td>
<td>6,123,811</td>
<td>1,456,675</td>
<td>348,520</td>
<td>4,318,616</td>
</tr>
<tr>
<td>11715</td>
<td>2,162,354</td>
<td>447,763</td>
<td>NIL</td>
<td>1,714,591</td>
</tr>
<tr>
<td>11816</td>
<td>1,654,602</td>
<td>342,622</td>
<td>NIL</td>
<td>1,311,980</td>
</tr>
<tr>
<td>11817</td>
<td>17,939</td>
<td>NIL</td>
<td>1,631</td>
<td>16,308</td>
</tr>
<tr>
<td>11819</td>
<td>49,987</td>
<td>11,890</td>
<td>2,845</td>
<td>35,251</td>
</tr>
<tr>
<td>TOTAL month of August</td>
<td>36,464,207</td>
<td>8,551,942</td>
<td>1,858,639</td>
<td>26,053,626</td>
</tr>
<tr>
<td>11818</td>
<td>252,264</td>
<td></td>
<td>22,933</td>
<td>329,331</td>
</tr>
<tr>
<td>11820</td>
<td>43,993</td>
<td>10,465</td>
<td>2,504</td>
<td>31,025</td>
</tr>
<tr>
<td>11821</td>
<td>1,473,305</td>
<td>350,456</td>
<td>83,849</td>
<td>1,039,000</td>
</tr>
</tbody>
</table>
3.) Contract with CSI Company, Lda of Timor Leste for 24 MW extension of Comoro power plant

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.
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 (Amount paid).
- The second interim payment covering the activity done during the month of May 2011 has been submitted in the amount of US $ 4,792,754.00 (Amount paid).
- The third interim payment covering the activity done during the months of June & July 2011 has been submitted in the amount of US $ 4,275,387.00 (amount paid).
- The fourth interim payment covering the activity done during the months of August 2011 has been submitted in the amount of US $ 3,890,728.00 (amount paid).
- The fifth interim payment covering the activity done during the month of September 2011 has been submitted in the amount of US $ 5,438,895.00 (amount paid).
- The sixth interim payment covering the activity done during the month of October 2011 has been submitted in the amount of US $ 3,848,671.40 (amount in process).
- The seventh interim payment covering the activity done during the month of November 2011 has been submitted in the amount of US $ 5,539,354.60 (amount in process).

**Total invoiced US $ 29,245,420.00 equal to 94.65 % of the Contract value**

4.) **Contract with bps Pt Bangun Prima Semesta for the 20KV Connection Between Dili New Substation and existing Comoro Feeders**

A. Contract Signed on 12 August 2011

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>US $ 1,326,900.75</td>
</tr>
<tr>
<td>Revised scope of work</td>
<td>US $ 933,000.00</td>
</tr>
<tr>
<td>Total Amount</td>
<td>US $ 2,259,900.75</td>
</tr>
</tbody>
</table>

B. Disbursement schedule
- Fifty percent (50%) of the value of each item upon delivery to the site and certified by the Owner’s representative
- Thirty percent (30%) of the value of each item upon erection work done and certified by the Owner’s representative.
- Twenty percent (20%) of the value of each item after completion of the works and after successfully testing-commissioning and handing over to the Owner.

Up to the present time the Contractor has not submitted any progress payment Invoice.
**a) Summary of Contracts Contractual Data**

**a-1** CNI22. Contract Agreement No. RDTL 812931 effective as from October 25, 2008.

**a-2** CNI22. The 1st Amendment to Contract Agreement No. RDTL 812931 effective as from February 27, 2009.

**SCOPE OF WORK**

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 plant and will be fully maintainable without interruption. The power Plant and Electric power grid shall consist of the following:

(i) One power plant will be located in Manatuto (north Timor Leste) with a capacity of 121.78MW, consisting of 4x8.82MW, 2x11MW, 3x21.5 MW, and 2x1MW (start up) generating sets.

(ii) The existing power plant (Dili), Manatuto and Same Power Plant will be connected through a Power Grid system.

(iii) Around 630 Kms length of the national Power Grid shall consist of 60 Kms double circuit, 570 Kms single circuit 110KV transmission line and 10 substations located at Dili, Baucau, Liquica, Manatutu, Lospalos, Burburoron, Viqueque, Same, Suai and Maliana.

**CONTRACT PRICE**

The total Contract Price is US $360,366,947 payable as follow:

(a) US $91,038,377.00 for power plant and its facilities.

(b) US $269,328,570.00 (equivalent to foreign currency RMB 1,885,300,000.00) for power grid and its facilities

In addition US $3,000,000.00 per year for management and operation of the whole Power Plant and Power Grid and training of Owner’s nominated personnel for a period of 5 years, computed from the issuance of the certificate of Completion of the installation of the works.

**a-3** CNI22. The 2nd Amendment to Contract Agreement No. RDTL 812931 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, Casa, 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;

<table>
<thead>
<tr>
<th>Plant</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hera</td>
<td>120 MW</td>
</tr>
<tr>
<td>Betano</td>
<td>130 MW</td>
</tr>
</tbody>
</table>

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.

**a-4 CNI22. The 3rd Amendment to Contract Agreement No. RDTL 812931 effective as from May 13, 2011.**

Following the decision of the Owner to cancel from CNI22’s contract the two (2) power plants of Hera and Betano the new scope of work is summarized as below:

**SCOPE OF WORK**

The Contractor shall provide a complete national Electrical Power Grid that shall cover the whole country, shall be fully maintainable without interruption.

(i) Power Plants Hera & Betano cancelled.

(ii) Comoro Power Plant to be connected to the Power Grid.

(iii) Around 715 Km length of the national Power Grid shall consist of 58 Km double circuit, 657 Km single circuit 150KV transmission lines and 9 substations located at Dili, Liquica, Manatuto, Lospalos, Viqueque, Casa, Suai and Maliana. The length of the Transmission Lines is based on map’s routing measurements only and will be revised with
actual lengths from Substation’s Gantry to Substation’s Gantry in plus or minus without affecting the Contract Price.

(iv) 120 Km of 20KV Distribution Lines to connect Aileu, Gleno, Same and Ainaro from the nearest 150/20KV Substations, and connecting of the Substations to the 20KV power Grid. This total length of the lines is fix and additional kilometers of lines, if required, will be paid as an additional amount to the contract price.

(v) In Hera, Mobilization of the Contractor, Site Facilities, Site preparation, Civil Works, retaining Walls, drainage Canal, Fuel Tanks Construction. In Betano, Clearing and Survey.

CONTRACT PRICE

The Owner hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The total Contract Price for the Works is US $ 298,496,192.00 aggregate of:

(a) US $ 22,403,345.00 for Power Plants works executed in Hera and Betano.
(b) US $ 276,092,847.00 for Power Grid 150 and 20 KV.

In addition US $ 5,126,400.00 for management, training, maintenance and operation of Power Grid and training of the Owner’s nominated personnel, computed from the issuance of the Certificate of Operational Acceptance of the works or part thereof.

The contract prices are fixed not subject to any variation and remain unchanged also in case of currency fluctuation and raw materials basic prices increase.

SCOPE OF WORK

The Contractor shall, on Engineering - Procurement - Construction basis (EPC), provide to the Owner:

(a) 7 x W18V46 power plant, with a total gross electrical power of 119,532 KW in Hera.
(b) 8 x W18V46 power plant, with a total gross electrical power of 136,608 KW in Betano.
(c) 150KV High Voltage Outdoor Switchyard and Transformers annexed to Hera power plant (supplemental agreement)
(d) 150Kv High Voltage Outdoor Switchyard and Transformers annexed to Betano power plant (supplemental agreement)

The Contractor shall provide design, engineering, equipment procurement, construction, start-up, testing and training services for dual combustion system (oil and Natural gas) fired engine generating power plants.

The Contractor shall provide design, engineering, equipment procurement, construction, start-up, testing and training services for the 150KV switchyards.
CONTRACT PRICE

The contract prices shown are inclusive of all taxes levied in Timor Leste: Import duty 2.5%, Sale tax 2.5%, withholding tax 2.0% and in addition the prices of goods imported from Europe have been adjusted according to the fluctuation of exchange rate between US Dollar and Euro.

(i) HERA POWER PLANT
- Basic Contract Price US $ 154,196,280.00
- Switchyard price US $ 14,500,000.00
- Taxes US $ 11,410,628.00
- Exchange rate adjustment US $ 6,312,942.00
  TOTAL US $ 186,419,850.00

(ii) BETANO POWER PLANT
- Basic Contract Price US $ 176,224,320.00
- Switchyard price US $ 13,200,000.00
- Taxes US $ 12,790,849.00
- Exchange rate adjustment US $ 17,536,304.00
  TOTAL US $ 219,751,473.00

Above Contract Prices are subject to increase when new Supplemental Agreement shall be issued upon the implementation of the extra works such as:

For Hera, jetty to offload fuel, supply of fuel, connection to the oil storage tanks, administration building, residential complex, Operation and Maintenance of the plant, various miscellaneous.

For Betano, jetty to offload fuel, supply of fuel, storage tanks, administration building, residential complex, Operation and Maintenance of the plant, various miscellaneous.

a-6 CSI Company Lda of Timor Leste — Contract Agreement No. RDTL 100053 effective as from December 23, 2010.

SCOPE OF WORK

Engineering Design, Supply and Installation, testing and commissioning of 24 MW Extension of the Comoro Diesel Generating Power Station: 5 x 5500 KW, auxiliary, fuel tanks, fuel system, cooling system, electrical components, transformers, steel structures building, accessories, all requirements to put the Power Plant in full operational conditions.

CONTRACT PRICE

The Contract Price is the amount of US $ 30,900,000.00 and is fix and not subject to any adjustment and or escalation.

a-7 bps TP Bangun Prima Semesta - Contract Agreement effective as from August 23, 2011.

SCOPE OF WORK

Engineering, Procurement, and Construction of the 20KV Over Head Line Connecting the New 150/20 IN Dili Substation with the existing Six (6) Feeders now connected to Comoro Power Plant.

CONTRACT PRICE

The Contract Price is in the amount of US $1,326,900.22, price fix for each item, and for any additional works same unit prices shall apply.

The additional work required to extend connections to the various feeders in town is in the amount of US $993,000.00.
b) PROJECT REPORT

b-1 Work Schedule/Program

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**CONTRACT TIME SCHEDULE REVISED AS PER CNI22 AMENDMENT No. 3**
### HERA - BETANO POWER PLANTS

**PURI AKRAYA ENGINEERING LIMITED**

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**TIME SCHEDULE**
November 2011 report from Electroconsult/Bonifica about the power plants and national electricity grid.
Scanned and excerpted by La’o Hamutuk.
### Milestone Schedule of Cemoro Power Plant Project (Version A)

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<td>Auxiliary equipments and accessory machinery begin to be installed</td>
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<td>844</td>
</tr>
<tr>
<td><strong>Local</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hera Power Plant</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Substation</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Transmission Line</td>
<td>304</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>401</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td>1,245</td>
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<table>
<thead>
<tr>
<th></th>
<th>PAE Staff</th>
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</thead>
<tbody>
<tr>
<td>Management Personnel</td>
<td>89 expat+34 local=123</td>
<td></td>
</tr>
<tr>
<td>Hera Power Plant (Workers)</td>
<td>281</td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>542</td>
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<table>
<thead>
<tr>
<th></th>
<th>CSI Staff</th>
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<tr>
<td>Management Personnel</td>
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<td>Chinese</td>
<td>137</td>
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<tr>
<td>Local</td>
<td>40</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>191</td>
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</tbody>
</table>
(pages 185-193 in original report)

a) ENVIRONMENTAL MANAGEMENT PLANS

November 2011

A. INTRODUCTION

This report presents the findings of the Environmental Monitoring and Audit conducted for Contracts RDTL-92896 for China Nuclear Industry 22nd (CNI22) and RDTL1004115 for Puri Akraya Engineering Ltd. (PAE) conducted from 19 September to 21 October 2011. The respective Environmental Management Plans (EMP’s) for both Contracts have been prepared and are currently being implemented by the respective Contractors in their concerned work sites. Areas covered by this report are the following:

Puri Akraya Engineering Ltd. (PAE):
- Hera Power Plant
- Betano Power Plant

China Nuclear Industry 22nd Ltd.:
- Dili Sub-Station
- Manatuto Sub-Station
- Baucau Sub-Station
- Los Palos Sub-Station
- Cassa Sub-Station
- Maliana Sub-Station
- Viqueque Sub-Station
- Liquica Sub-Station
- Suai Sub-Station
- Baucau to Los Palos Transmission Towers
- Viqueque to Los Palos Transmission Towers
- Betano to Viqueque Transmission Towers
- Liquica to Maliana Transmission Towers

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.

Annex A presents the Environmental Management Plan of PAE. An Environmental Walk Through was conducted on 07 October 2011 by the Consultants, together with the representatives of PAE, Wartsila, Wika and ABB in Hera Power Plant. Tables 1 and 2 present the Summary Environmental Management Checklist as of 22 October 2011 for Contracts of PAE and CNI22 respectively.

1. ENVIRONMENTAL MANAGEMENT PLAN

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.

a) DESIGNATION OF AN ENVIRONMENTAL OFFICER

PAE has designated Mr. Banter Tambanan as their Health, Safety and Environmental Officer for the Hera and Betano Power Plants while CNI22 designated Mr. Cai Hui as their Health, Safety and Environment Officer.

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 all sub-stations and all other facilities of CNI22. Medical facilities should be established in each sub-station to service workers in their respective areas. There is no Medical Facility established in the Hera Power Plant. This needs to be rectified.

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

The HSE Plan for the Hera and Betano Power Plants as prepared by PAE has been accepted and is currently being implemented in Hera Power Plant. The Solid Waste Management (SWMP) is included in the EMP as submitted by PAE. The QHSE Management Plan as submitted during the Audit of November 2010 has yet to be revised as per Envi Field Directive Nos. 1, 2 and 3 of 01 June, 01 December 2010 and 16 April 2011. The Contractor (CNI22) has yet to prepare the Solid Waste Management Plan for all the facilities and work areas.

d) SPILL CONTINGENCY/EMERGENCY RESPONSE PLAN

The relevant Spill Contingency Plan for the Hera and Betano Power Plant is included in the EMP submitted by PAE. The Site Emergency Contingency Plan as submitted by CNI22 during the Audit of May 2010 has yet to be revised.
## Table 1. Summary Environmental Management Checklist — Puri Akraya Engineering Ltd (PAE)

<table>
<thead>
<tr>
<th>PROJECT ACTIVITY</th>
<th>POTENTIAL ENVIRONMENTAL IMPACT</th>
<th>PROPOSED MITIGATION MEASURE</th>
<th>COMPLIANCE</th>
<th>RESPONSIBLE ENTITIES</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-CONSTRUCTION PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAND ACQUISITION</td>
<td>Loss of land</td>
<td>Just and fair compensation to landowners.</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Proof of payment of land compensation EDTL</td>
</tr>
<tr>
<td></td>
<td>Health hazards and risks to workers and residents of nearby communities</td>
<td>Prepare Occupational Health and Safety Plan</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social conflicts with local residents</td>
<td>Undertake consultations with local residents prior to mobilization</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Safety Plan approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Priority employment for local workers</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Not Documented</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establishment of grievance/complaints desk at offices</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td><strong>CONSTRUCTION PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESTABLISHING CONSTRUCTION SITES</td>
<td>Generation of dust from clearing and grubbing</td>
<td>Minimize clearing to required area only</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Undertaken by CNI22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regular watering of exposed areas</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Watering area Program</td>
</tr>
<tr>
<td></td>
<td>Soil Erosion due to exposure of topsoil</td>
<td>Re-vegetate when possible and practicable</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plant available water</td>
</tr>
<tr>
<td></td>
<td>Generation of solid waste</td>
<td>Prepare Solid Waste Management Plan (SWMP)</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Form Waste management</td>
</tr>
<tr>
<td></td>
<td>Conflicts with local residents</td>
<td>Undertake consultations with local residents</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Not documented</td>
</tr>
<tr>
<td>SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES</td>
<td>Acute elevated levels of TSP/SO2/NOx</td>
<td>Minimize and control dust generation through regular spraying of exposed areas</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Watering area Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regular maintenance of heavy equipment, vehicles and machineries</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Form Inspeksi</td>
</tr>
<tr>
<td></td>
<td>Siltation and sedimentation of nearby water bodies</td>
<td>Containment and construction of siltation ponds and silt curtains</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Jetty Construction plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum vegetative removal</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proper management, handling and disposition of spoils and unsuitable materials</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>HSE Prog &amp; implementation</td>
</tr>
<tr>
<td></td>
<td>Contamination of nearby water bodies</td>
<td>Installation of oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fueling areas</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Office WIKA design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construction of bund walls of adequate capacity around fuel, oil and solvent storage tanks</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Fuel Storage design by wika</td>
</tr>
</tbody>
</table>
### Site Development and Construction of Facilities

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Potential Environmental Impact</th>
<th>Proposed Mitigation Measure</th>
<th>Compliance</th>
<th>Responsible Entities</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contamination of nearby water bodies</td>
<td>Proper handling and storage of petroleum products and toxic and hazardous substances</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Lay out godown</td>
</tr>
<tr>
<td></td>
<td>Installation of sanitation facilities in camps and site offices</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Office WIKA design</td>
</tr>
<tr>
<td></td>
<td>Installation of waste treatment facilities in ancillary facilities such as batching plants and related facilities</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Temporary Garbage Storage</td>
</tr>
<tr>
<td></td>
<td>Acute elevated levels of noise</td>
<td>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</td>
<td>X</td>
<td>PAE/ CSC/EDTL</td>
<td>Driver Schedule</td>
</tr>
<tr>
<td></td>
<td>Establishment of buffers between nearby settlement areas and work areas</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Project fence drawing</td>
</tr>
<tr>
<td>Loss of habitat</td>
<td>Cutting of trees and clearing of vegetative cover to be undertaken only when necessary</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
<tr>
<td></td>
<td>Relevant permits and clearances will be secured prior to cutting and clearing activities</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
<tr>
<td>Migration/Loss of wildlife</td>
<td>Habitat development and generation through planting of indigenous species</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
<tr>
<td></td>
<td>Re-vegetation of cleared areas</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
<tr>
<td>Loss of aesthetic values</td>
<td>Landscape development and design when possible and practicable</td>
<td>X</td>
<td></td>
<td>PAE/ CSC/EDTL</td>
<td>Architect plan</td>
</tr>
</tbody>
</table>

CNI22 - Contractor, China Nuclear Industry 22nd Construction Company Ltd.; CSC - Construction Supervision Consultants; EDTL - Electricidade Da Timor Leste; DoE - Directorate for Environment
TABLE 2. SUMMARY ENVIRONMENTAL MANAGEMENT CHECKLIST — CHINA NUCLEAR INDUSTRY 22ND CNI22

<table>
<thead>
<tr>
<th>PROJECT ACTIVITY</th>
<th>POTENTIAL ENVIRONMENTAL IMPACT</th>
<th>PROPOSED MITIGATION MEASURE</th>
<th>COMPLIANCE</th>
<th>RESPONSIBLE ENTITIES</th>
<th>REMARKS</th>
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<tr>
<td><strong>PRE-CONSTRUCTION PHASE</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAND ACQUISITION</td>
<td>Loss of land</td>
<td>Just and fair compensation to landowners.</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>No issue in this component during the audit period.</td>
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<tr>
<td></td>
<td>Health hazards and risks to workers and residents of nearby communities</td>
<td>Prepare Occupational Health and Safety Plan</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>The plan as submitted May 2010 has yet to be revised.</td>
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<tr>
<td><strong>PLANNING SITE ACTIVITIES</strong></td>
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<td></td>
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<tr>
<td></td>
<td>Health hazards and risks to workers and residents of nearby communities</td>
<td>Prepare Occupational Health and Safety Plan</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>The plan as submitted May 2010 has yet to be revised.</td>
</tr>
<tr>
<td></td>
<td>Social conflicts with local residents</td>
<td>Undertake consultations with local residents prior to mobilization</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Continuing Activity</td>
</tr>
<tr>
<td></td>
<td>Priority employment for local workers</td>
<td>Undertake consultations with local residents prior to mobilization</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Local laborers are employed by the Contractor</td>
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<tr>
<td></td>
<td>Establishment of grievance/complaints desk at offices</td>
<td>Undertake consultations with local residents prior to mobilization</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Non Complying</td>
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<td><strong>CONSTRUCTION PHASE</strong></td>
<td></td>
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</tr>
<tr>
<td>ESTABLISHING CONSTRUCTION SITES</td>
<td>Generation of dust from clearing and grubbing</td>
<td>Minimize clearing to required area only</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Complying</td>
</tr>
<tr>
<td></td>
<td>Regular watering of exposed areas</td>
<td>Regular watering of exposed areas</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Undertaken daily. Difficult this period due to dry season</td>
</tr>
<tr>
<td></td>
<td>Soil Erosion due to exposure of topsoil</td>
<td>Re-vegetate when possible and practicable</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>No re-vegetation been undertaken to date.</td>
</tr>
<tr>
<td></td>
<td>Generation of solid waste</td>
<td>Prepare Solid Waste Management Plan (SWMP)</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>No SWMP to date.</td>
</tr>
<tr>
<td></td>
<td>Conflicts with local residents</td>
<td>Undertake consultations with local residents prior to mobilization</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>On-going activity.</td>
</tr>
<tr>
<td><strong>SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES</strong></td>
<td>Acute elevated levels of TSP/SO2/NOx</td>
<td>Minimize and control dust generation through regular spraying of exposed areas</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Undertaken daily. Difficult this period due to dry season</td>
</tr>
<tr>
<td></td>
<td>Regular maintenance of heavy equipment, vehicles and machineries</td>
<td>Regular maintenance of heavy equipment, vehicles and machineries</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Undertaken regularly</td>
</tr>
<tr>
<td></td>
<td>Siltation and sedimentation of nearby water bodies</td>
<td>Minimum vegetative removal</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Complying</td>
</tr>
<tr>
<td></td>
<td>Proper management, handling and disposition of spoils and unsuitable materials</td>
<td>Proper management, handling and disposition of spoils and unsuitable materials</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Complying</td>
</tr>
<tr>
<td></td>
<td>Contamination of nearby water bodies</td>
<td>Installation of oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Complied</td>
</tr>
<tr>
<td></td>
<td>Construction of bund walls of adequate capacity around fuel, oil and solvent storage tanks</td>
<td>Installation of oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas</td>
<td>X</td>
<td>CNI22/CSC/EDTL</td>
<td>Complied</td>
</tr>
</tbody>
</table>
## Site Development and Construction of Facilities

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Potential Environmental Impact</th>
<th>Proposed Mitigation Measure</th>
<th>Compliance</th>
<th>Responsible Entities</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contamination of nearby water bodies</td>
<td>Proper handling and storage of petroleum products and toxic and hazardous substances</td>
<td>X CNI22/CSC/EDTL</td>
<td>Needs improvement</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Installation of sanitation facilities in camps and site offices</td>
<td>X CNI22/CSC/EDTL</td>
<td>Complying</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Installation of waste treatment facilities in ancillary facilities such as batching plants and related facilities</td>
<td>X CNI22/CSC/EDTL</td>
<td>None have been constructed to date.</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td>Acute elevated levels of noise</td>
<td>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</td>
<td>X CNI22/CSC/EDTL</td>
<td>Complying</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regular maintenance of heavy equipment and machineries</td>
<td>X CNI22/CSC/EDTL</td>
<td>Complying</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Establishment of buffers between nearby settlement areas and work areas</td>
<td>X CNI22/CSC/EDTL</td>
<td>None have been established to date</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td>Loss of habitat</td>
<td>Cutting of trees and clearing of vegetative cover to be undertaken only when necessary</td>
<td>X CNI22/CSC/EDTL</td>
<td>Complying</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relevant permits and clearances will be secured prior to cutting and clearing activities</td>
<td>X CNI22/CSC/EDTL</td>
<td>No permits have been presented to date.</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td>Migration/Loss of wildlife</td>
<td>Habitat development and generation through planting of indigenous species</td>
<td>X CNI22/CSC/EDTL</td>
<td>None undertaken to date.</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re-vegetation of cleared areas</td>
<td>X CNI22/CSC/EDTL</td>
<td>None</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
<tr>
<td>Loss of aesthetic values</td>
<td>Landscape development and design when possible and practicable</td>
<td>X CNI22/CSC/EDTL</td>
<td>None</td>
<td>CNI22/CSC/EDTL</td>
<td></td>
</tr>
</tbody>
</table>

CNI22 - Contractor, China Nuclear Industry 22nd Construction Company Ltd.; CSC - Construction Supervision Consultants; EDTL - Electricidade Da Timor Leste; DoE - Directorate for Environment
e) **Prevention of Pollution (Air, Water and Noise)**

The Contractors, PAE and CNI22, undertakes regular wetting/watering of exposed grounds on a daily basis. During this Audit period, this activity has been hampered by the availability of fresh water as this is relatively difficult to secure during the dry season. However, the contractor, to the extent possible, still complies with this requirement. Service vehicles, trucks, heavy equipment and machineries are regularly maintained.

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. Identification and compensation for the felled trees are addressed by the GoTL through EDTL.

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. There is no issue relevant to the ROW of the Hera and Betano Power Plants. Consultations undertaken by PAE have not been properly documented. This shall be rectified in the succeeding Audit. ROW acquisition for Facilities and Transmission Towers, which is the responsibility of the GoTL has been adequately and expeditiously addressed.

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. This is not a concern for the Power Plants as these areas have already been acquired by the GoTL prior to the awarding of the Contract of PAE. Public services have not been affected by the current works.

i) **Occupational Health and Safety**

**Protective Clothing and Safety Equipment**

Workers are of both Contractors, PAE and CNI22, are adequately provided the basic PPE such as hard hats and safety shoes. Consultants were provided safety shoes and hard hats by ELC & Bonifica.

**Supply of Drinking Water and Sanitation**

Adequate water supply is provided in the Hera Power Plant being constructed by PAE and all substations being constructed by CNI22. Water is normally sourced from commercial sources as water extracted from the wells is not potable. Water for operational concerns are sourced from these wells.

**Temporary Facilities for Workers Including Sanitation and Waste Disposal**

As per the SWMP prepared by PAE, solid waste is properly disposed in designated areas. As was observed in all the facilities of CNI22, 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**

The Traffic Management Plan for Hera Power Plant is included in the EMP as prepared by PAE and adequately addresses the traffic situation in the said work site. There is no traffic management being implemented in the facilities and no traffic management plan submitted by CNI22 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 audits, CNI22, the Contractor for all the sub-stations and the transmission tower have not submitted any monthly environmental management and monitoring report since mobilization in January 2010. As per the EMP prepared for the Project, CNI22 is contractually obligated to prepare monthly environmental monitoring reports covering the implementation of the EMP. CNI22, the Contractor has not complied with this requirement since his induction in the project.

E. ISSUES AND CONCERNS

- Environmental Permits and Clearances from the National Directorate for Environmental Conservation has yet to be secured by Contractors, PAE and CNI22, for their respective Contracts. This is a requirement of the GoTL and has to be complied with immediately.

- As was cited in previous audits, the EMP for CNI22 stipulates that a Baseline Survey for Air, Noise and Water Quality. The Contractor has not yet conducted this activity to date.

- As has been cited in the previous audits, the EMP stipulates that Monthly Environmental Monitoring for Air, Noise and Water Quality be conducted as expounded in Table 3 of the said EMP. CNI22, the Contractor for the sub-stations and transmission towers, has yet to comply with this requirement.

- As has been observed in several locations in the Viqueque to Los Palos Transmission line, Waste cement was indiscriminately dumped by the transit mixer along the access roads. This should immediately be cleaned and instruction to the drivers of the transit mixers be given to prevent further this practice.

OCCUPATIONAL SAFETY & HEALTH (OSH)

CNI22

Testing and commissioning of the two (2) substations, Dili and Liquica were in full throttle so as to meet the schedule of Energization that was the 27th of Nov. Start-up procedures were realized on the 24th November with all stakeholders and this contractor as well to ensure that synchronization was achieved. This contractor was up to the job by setting up controls at the access gates where only authorized personnel were allowed to enter which was strictly followed. Rectification works on the transmission lines were done ahead of schedule and by the time the start up would commence, all lines were ready. Good job!

PAE (Hera Power Plant & Betano Power Plant)

The revised plan to transport the power plant engines using a temporary jetty infront of thee Hera plant location made it easy for the delivery of the six (6) engines to its intended location. While all the other components were made by way of the road and delivered safely as well. Construction of the switchyard towers and transformers were also done in a very fast manner but all things considered, no untoward incident happened including testing and eventually the commissioning that happened at tail end of the month.
SUMMARY:

It was a very busy month as almost all contractors were hurrying up all installations to meet the scheduled start-up and commissioning of all equipments for the eventual energization that had happened at the end of the month. In fairness to all contractors involved, all activities were done and completed and the goal was realized without having any injury or lost day cases considering the number of workers involved and it can be considered an extraordinary feat to accomplish it. Kudos and we can now say as long as people are focused on what they do and pre-planning was made, execution would be easy and all works were done in a safe manner. It is expected the same cooperation and execution can be repeated when all work activities will be shifted to the Betano Power Plant area sometime next year.
PROBLEMS / ISSUES AND RECOMMENDATIONS

Problems/Issues Encountered mainly with CNI22.

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.

2. Work preparation not carefully planned to match with the existing site conditions, such as rains and landowner’s interference for access.

3. Unprofessional handling of the materials during loading, unloading and transporting from the yard to the site that causes heavy damages to the materials itself.

4. 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.

5. Quality of the workmanship in general is very poor. A lot of unqualified Chinese workers are used as subcontractors who do not care of the quality and of the finishing up.

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 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.

3. 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.

4. 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.

5. The Contractor should supply to all workers the Personal Protective Equipment (PPE), which must be strictly worn by everybody on the jobsite.

6. 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.

All above problems/issues do not exist or are minimal with others Contractors: PAE, Wartsila, ABB, Vika and CSI.