

**Scanned and excerpted from the Monthly Progress Report of the Construction Supervisor for the Nationwide Electrical Power Grid and Power Plant and its Facilities by La'o Hamutuk. Emphasis in original.**

For more information on this project, see <http://www.laohamutuk.org/Oil/Power/10PowerPlant.htm>

**PROJECT REPORT**  
**EXECUTIVE SUMMARY**  
*(pages 8-11 in original report)*  
**For the Month of October 2010**

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

The activity along the Power Grid of Timor Leste during the month of October, month which is normally hot and dry, has been affected by rain of high intensity. Such weather has never been recorded in the Country during this season.

The adverse climate condition contributed somehow to the slow progress achieved by the Contractor CNI22.

The Consultant is constantly making pressure on CNI22 to speed up agreements with Indonesian subcontractors for transmission lines and Timorese subcontractors for the substations, but the result is always the same : promises over promises , the Contractor attitude remains stubborn .

More and more Chinese workers are coming, the total community now is over 500 people , but in the field a major improvement expected is not seen.

Activities are concentrate mainly in civil works of Dili substation, Manatuto substation , transmission line Hera-Manatuto-Baucau and Dili-Liquica while the number of towers erected remains insignificant . The Contractor CNI22 seems not to bother too much about the accumulation of the delay in the time schedule.

The overall progress of the Power Grid achieved at the end of October is 17.65% against the planned 39.18%.

To be noted that the ship transporting two main transformers and electrical equipment from China docked Dili port just on October 27, computation of the value of these equipments shall be inserted in the next monthly report.

In the front of the two Power Plants Hera and Betano the Indonesian Contractor Puri Akrya Engineering Limited is seeking to get the advance payment or at least a portion of what stated in the contract.

The work progress achieved during the month of October 2010 in the various sections of the project can be summarized as follow :

**Dili Substation**

- The bricks fencing wall : plastering on the side along the river in progress .
- The building for the 20KV equipment : construction of external bricks wall started.
- The main control building : concrete structures above ground are under reinforcing steel and formworks preparation.
- The 150KV outdoor area : the main foundations for the gantry steel structures are 100% completed while the support foundations of electrical equipment are 90% completed.
- The main cable trench is done for a length of 70m
- The pump house foundation is ready to be concreted

### **Manatuto Substation**

- No major activity on site . The works are centered in the construction of the fence bricks wall of which 80% is completed . External drainage ditch is also done in parallel with the wall . The Contractor stated that foundation works of the major structures will start within the month of November.

### **Baucau Substation**

- No activity done .

### **Lospalos Substation**

- No activity done after the soil investigation was completed .

### **Liquica Substation**

- No activity done , the Contractor is fully authorized to move in.

### **Maliana Substation**

- No activity done.

### **Suai Substation**

- No activity done, the Contractor is fully authorized to move in.

### **Cassa Substations**

- No activity done.

### **Viqueque Substation**

- The Local subcontractor has started the work of site leveling and of the embankment.

### **Hera Power Plant**

- The only activity carried out by CNI22 is the pointing work on the retaining wall south side. The steel plates for the construction of the oil tanks are on board of ship which had a breakdown and there are no news of when this ship will arrive in Dili

### **Betano Power Plant**

- No activity done.

### **Transmission Lines**

- **Hera – Dili : Total number of Double Circuit Towers = 30 units (9.89 Km)**
  - Total number of Tower Foundation Excavated = 28
  - Total number of Tower Foundations Concreted = 27
  - Total number of Tower Erected = 27

The towers remaining are No.1-30 for excavation , No. 1-2-30 for concrete and No. 1-2-30 for erection .

- **Hera – Manatuto : Total number of Double Circuit Towers = 92 units (41.5 Km)**

Total number of Tower Foundation Excavated	=	65
Total number of Tower Foundations Concreted	=	54
Total number of Tower Erected	=	14
Total number of Excavation in progress	=	15

- **Manatuto – Baucau : Total number of Single Circuit Tower = 127 units (60.0 Km)**
  - Total number of Tower Foundation Excavated = 75
  - Total number of Tower Foundations Concreted = 51
  - Total number of Tower Erected = 0
  - Total number of excavation in progress = 12
- **Baucau — Lospalos : Total number of single circuit tower = 118 units (53.280 Km)**
  - .No activity

- **Baucau — Viqueque :Total number of single circuit tower = 96 units (64.00Km)**  
The survey of the cross section of each tower location is completed. No other activity..
- **Dili — Liquica : Total number of single circuit tower = 87 units (36.841 Km)**  
Total number of Tower Foundation Excavated = 44  
Total number of excavation in progress = 15  
Total number of Tower Foundations Concreted = 22
- **Liquica — Maliana**  
The survey of the cross section of tower location is in progress .
- **Maliana — Suai**  
field survey activity is in progress
- **Suai — Cassa**  
No activity is reported.
- **Cassa — Betano**  
No activity is reported.
- **Betano — Viqueque**  
No activity is reported.
- **Viqueque — Lospalos**  
The field survey works has been completed .

*(pages 12-27 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 : October14, 2010

Participants :

**EDTL**

Mr. Roberto Manuel Marcal (Project Manager)

Mr. Frederico dos reis da Silva ( Power Plant Engineer) . Not attending

Mr. Francisco Soares Pica ( In-charge of the Substations).

Mr. Domingo dos Reis ( Substation Engineer). Not attending

Mr. Gilberto Siguera ( In-charge of Transmission lines) . Not attending

Mr. Jaime Camacho ( Power Plant Engineer ). Not attending

Mr. Bento Xavier ( Power Plant Engineer ). Not attending

Mr. Alexander de Jesus (Substations Engineer)

Mr. Jose Antonio Bobo (Administration )

**CONSULTANT**

Mr. Felice Maffei (Project Manager)

Mr. Virgilio Rivera (Civil Engineer) .

Mr. Joko Siswadi (Electrical Engineer).

Mr. Zoltan Lukacsi (QA/QC Engineer).

Mr. Jose Domingo Verasay (Electrical Engineer) .

Mr.Napoleon Villanueva (Asst. Civil Engineer 1for Dili Substation).

**CONTRACTOR CNI22**

Mr. Li Tao (Project Manager) .

Mr. Wu Yong Jun (Chief Engineer).

Mr. Hung Kaifu (chief engineer for Hera power plant) .

Mr. Zhang Ming Cun (Substation Manager). Not attending

Mr. Zhang Ming Ping (Transmission Line Manager). Not attending

Mr. Zou Xiaoming (Hera power plant Manager ).Not attending

Mr. Zhou Zhong Qi ( Dili Substation Engineer) .

Mr. Peng Liwei (Interpreter). Not Attending

Mr. Tang Zi Xian (Interpreter) .Not attending

Mr. Liu Jie ( Electrical Engineer) .

Mr. Jiang Pei Yun ( Transmission Lines Dep. Manager).

Mr. Xiao Yali (Transmission line Engineer) . Not attending

Mr. Peng Li Xian (Transmission Line Engineer). Not attending

Mr. Jiang Yan ( Transmission Line Engineer).

Mr. Li Dawei ( Transmission Line engineer).

Mr. Zhu Ling ( Designer). Not attending

Mr. Li Yui ( Designer ).Not attending

Mr. Cai Hui ( QHSE ).

Ms Dina (Interpreter).

Miss. Gau (interpreter).

**Subject of the meeting : Coordination of the works**

Agenda of the present meeting :

- 1) Comments on the last minute of meeting dated September 29 , 2010.
- 2) Progress of works.
- 3) Delivery status of materials and equipment.
- 4) Drawings and technical specifications.
- 5) Insurance policy
- 6) Payments

Before opening the meeting the Consultant Mr. Felice Maffei expressed his sorrow for the accident which occurred last Monday October 11, 2010 , a truck transporting materials to the tower location No. 46 of Hera-Manatuto section overturned, and a Chinese worker lost his life. Hence the importance to have the coverage of ALL RISK INSURANCE in accordance to the contract .

The Contractor stated that each Chinese worker going overseas is covered by a special insurance stipulated by CNI22 in China with local insurance company.

After this parenthesis the Consultant mentioned the deterioration on the quality of the work noticed along the transmission line , and some pictures were shown as evidence :

- large size of stone , boulders were dumped in the concrete foundation , by doing this the engineer in charge of the foundation work and the whole team are irresponsible and unprofessional people which have to be removed from the site and sent back to China . In any case the Consultant stated clearly that all those foundations reported to have been concreted with boulders dumped inside will not be paid and will be cancelled from the monthly interim payment . In future similar foundations will be ordered to be demolished and concreted again.
- The steel structure of the towers are badly mishandled during transportation to the site , are dumped in the ground , many pieces are damaged , bended and galvanization heavily scratched . Several time the Contractor was reprimanded on this issue , but it seems that he does not listen. Tough actions shall be considered if the Contractor does not find a remedy.

#### 1) Comments on the last minute of meeting dated September 29, 2010

No comments from the Contractor.

No comments from EDTL

No comments from those present

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

#### 2) Progress of the works

##### **Transmission lines .**

During this period of 15 days of activity , since the last meeting , the improvement on the quantity of work promised by the Contractor is not seen in the field .

The daily quantity of work done remains very far below the minimum requirement.

The Contractor stated that one of the main reason of this poor performance is due to the shortage of cement in the market . The Consultant remarked that shortage of cement will not affect the excavation work and the erection of towers , therefore the justifications of the Contractor are groundless .

From Liquica substation up to Lospalos substation there are 458 Towers (provisional number since field survey near Manatuto and Baucau substations has to be completed , this will be done within the month of October as stated by the Contractor.

The overall situation is summarized in the following table:

Section	excavation	concrete	Tower erection	Total number
Hera-Dili	28	27	26	30
Hera- Manat.	56	43	10	92
Manat.-Baucau	60	37	--	131
Dili-Liquica	31	5	--	87
Baucau-Lospa.	–	--	–	118
TOTAL	175	112	30	458
<b>THIS Period of 15 days</b>	<b>27</b>	<b>19</b>	<b>6</b>	

The quantity of work done during this period from September 29 up to October 14 is still very unsatisfactory very far from what could be as the minimum requirement for the project to be completed on scheduled time 31st December 2011.

The Contractor must constantly keep in mind that for every single calendar day , the minimum requirement is :

- 4 (four) Excavation complete of tower foundations
- 4 (four) Concrete complete of tower foundations
- 4 (four) Erection complete of tower structure including tightening of bolts.

The TIME SCHEDULE which has been shown to H.E. the Prime Minister if not maintained the Owner shall apply penalty for each week of delay in the completion date.

The Contractor should consider this as a warning.

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

Tower foundations N1 and N 30 are in process of excavation Tower Foundation to be concreted remain N1-N2 and N30 Tower to be erected are N1-N2-N26-N30

The Contractor is reminded that in view to start stringing of the conductors at beginning of November , must start from now the roads crossing protection with appropriate scaffolding .

The Contractor said that arranging for the roads protection will not take long and it will be done one week before stringing operation begin .

The Contractor is reminded to submit on time the detailed description of the stringing method for approval.

Clearing right of way 25 m wide , the Contractor stated that agreement has been done with local various Chefe Suco who shall coordinate and divide the works within the local communities .

DILI – LIQUICA ( 36.80 KM – 87 towers )

The excavation work is completed in 31 tower foundations and is in progress in 7. The concrete has been done in only 5 towers foundations.

HERA – MANATUTO ( 41.500 KM – No. 92 towers )

The excavation work is completed in 56 tower foundations and is in progress in 11. The concrete has been done in 43 tower foundations.

The tower foundation No.27 is in progress with piling , but it requires long time with the type of old drilling machine used .

The towers erected are 10

MANATUTO – BAUCAU ( 50.065 Km -131 towers )

The excavation work is completed in 60 tower foundations and is in progress in 15. The concrete has been done in 37 tower foundations .

Towers erection will start as soon as the steel structures being shipped from China will arrive at site.

BAUCAU – LOS PALOS ( 53.280 KM – 118 towers )

No activity is reported . The survey of cross section of the towers location is completed and now the design have to be submitted.

BAUCAU – VIQUEQUE ( 64 KM – 96 towers)

No activity is reported . The cross section survey of the tower foundations is completed .

LIQUICA – MALIANA ( 63 KM – 112 towers )

The surveyors are working to complete the section of 7 Km near the river.

## MALIANA – SUAI – CASSA – BETANO

Field survey work is in progress with one group of surveyors.

### BETANO - VIQUEQUE

Plan and longitudinal profile are under preparation

### VIQUEQUE – LOSPALOS

A second group of surveyors is now on site to do field survey.

Concerning the Indonesian Contractors to be utilized for the construction of the portion of the transmission line along the South Coast the situation is as follow :

CNI22 is still in the negotiation phase with <DCP> Company from Surabaya for the section Liquica-Maliana-Suai . Quotation for the first section Liquica – Maliana has been submitted to CNI22 , but from first analysis prices look to be very high.

For the sections Suai-Cassa-Betano-Viqueque , CNI22 had preliminary contact with <PT.KARYA LOGAM AGUNG> Company from Jakarta , proposal is now under preparation by this contractor and will be submitted soon .

## Substations

### DILI SUBSTATION

The remaining three foundations of the 150 KV steel structures are under preparation and concrete will start in this week.

The main cable trench is done for 60 meter in length .

Around the transformers foundations oil emergency tanks have been completed. . On the 20KV Building work will resume after curing of the roof concrete is over.

On the main control building the foundations are completed and backfilling done up to the ground level . For the columns and walls for the first floor above ground level the Contractor stated that there is a shortage of reinforcing steel size 25 and should wait few days till the ship arrive at Dili port.

Consultant said that the reinforcement steel size 25 can be easily substituted with other size , just to submit the simple calculation.

### MANATUTO SUBSTATION

The work done is 60 meter length of bricks fence wall .

The construction drawings , in order to start the civil work of the building and of the Steel structures , arrived from China and shall be submitted to-day .

### BAUCAU SUBSTATION

No activity has been done since the Contractor took possession of the site on August 16 , 2010 . The Contractor stated also that soil investigation can be done only after the lay-out is approved by Consultant.

The Consultant stated that the soil investigation can be done at any time there is no reason to wait for the lay-out approval , it is only a question of willingness.

The Contractor promise to send the equipment for soil boring next Saturday October 16.

### LOS PALOS SUBSTATION

Negotiations with local subcontractor for the civil works are in progress .

### LIQUICA SUBSTATION

Soil investigation report is submitted to-day .

Preparation for site levelling and embankment will start soon with local subcontractor.

#### MALIANA SUBSTATION

No activity done , the Contractor stated that he want start working in this place next year 2011.

The Consultant said that is a wrong decision , preliminary works like fence and embankment better to be done now in order to avoid the land being occupied by the local community.

#### SUAI SUBSTATION

Agreement with land owners for the compensation of the trees to be cut before handing over the site to the Contractor has been achieved with the land department.

The Contractor is authorized to mobilize in.

#### CASSA SUBSTATION

No activity done , there are no obstacles for the Contractor to mobilize in.

#### VIQUEQUE SUBSTATION

The Contractor stated that agreement with local subcontractor has been done and the work for the embankment will start on Saturday October 16.

#### **Hera Power Plant**

No activity is reported .

Contractor stated that the steel plate for oil tanks are expected to arrive at Dili port on October 20, and construction works will start soon.

**The Contractor is reminded that major works to be completed are : Embankment , Drainage Canal up to the road crossing , Fencing Bricks Wall and there are no reasons to have stop for long time this activity.**

#### **Betano Power Plant**

No activity

#### 3) Delivery of Material and Equipment

The Contractor finally submitted to-day a copy of the packing list of material and equipment which is arriving in Dili port in few days time (October 20).

Examining the packing list , materials on board are : cables , electrical equipment , hardware , steel towers structures , steel plates for oil tanks , tools and equipment , compressors , trucks , concrete mixers .

#### 4) Drawings and technical specifications

All the submitted drawings have been returned with comments and corrections mainly in the format , in the title block , in the writing , except for the electrical drawings which require a lot of correction in the concept and in the content .

Concept and contents of the civil drawings , of the steel structures drawings , of the transmission line towers drawings were accepted , major corrections have been done only on the roof of the substations buildings.

Now the Contractor should submit a clean copy of each drawing in order to be officially sealed with stamp <**Approved for construction**>



### 5) Insurance

There is no precise information about this issue .

The Contractor stated that :

- Materials shipped are normally covered by marine insurance policy provided by the shipping agent .
- The workers are covered in case of accident by a insurance policy made in China by the Head Quarter .
- Concerning the All Risk Insurance requested in the contract , the Contractor continue to work at his own risk .

The Consultant requested evidence of these insurance policies stipulated in China.

### 6) Payments

All the payments have been made by the Owner , the only outstanding payment is the one relevant to the interim payment certificate No. 7 for the month of September now under preparation .

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

Next meeting is scheduled for Thursday 28 October at 14:30 in Hera.

**Contract RDTL - 812931**

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

**MINUTE of MEETING**

Location : HERA – CNI22 Office

Date : October 28, 2010

Participants :

**EDTL**

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

**CONSULTANT**

Mr. Felice Maffei (Project Manager)  
Mr. Virgilio Rivera (Civil Engineer) .  
Mr. Joko Siswadi (Electrical Engineer).  
Mr. Zoltan Lukacsi (QA/QC Engineer).  
Mr. Jose Domingo Verasay (Electrical Engineer) .  
Mr. Napoleon Villanueva (Asst. Civil Engineer 1for Dili Substation).

**CONTRACTOR CNI22**

Mr. Li Tao (Project Manager) .  
Mr. Wu Yong Jun (Chief Engineer).  
Mr. Hung Kaifu (chief engineer for Hera power plant ) .  
Mr. Zhang Ming Cun (Substation Manager). Not attending  
Mr. Zhang Ming Ping (Transmission Line Manager). Not attending  
Mr. Zou Xiaoming (Hera power plant Manager ).Not attending  
Mr. Zhou Zhong Qi ( Dili Substation Engineer ) .Not attending  
Mr. Peng Liwei (Interpreter). Not Attending  
Mr. Tang Zi Xian (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. Peng Li Xian (Transmission Line Engineer).Not attending  
Mr. Jiang Yan ( Transmission Line Engineer).  
Mr. Li Dawei ( Transmission Line engineer).  
Mr. Zhu Ling ( Designer). Not attending  
Mr. Li Yui ( Designer ).Not attending  
Mr. Cai Hui ( QHSE ).  
Ms Dina (Interpreter).  
Miss. Gau (interpreter). Not attending

**Subject of the meeting :** Coordination of the works

Agenda of the present meeting :

- 1) Comments on the last minute of meeting dated October 14 , 2010.
- 2) Progress of works.
- 3) Delivery status of materials and equipment.
- 4) Drawings and technical specifications.

- 5) Insurance policy
- 6) Payments

Before entering in the various issue of the meeting the Consultant Mr. Felice Maffei reiterated once more the deterioration of the quality of the work , apparently the lesson given during the previous meeting of October 14 did not make any effect on the Contractor . some pictures of tower foundation No.47 on Hera- Manatuto were shown as evidence :

- Again , like the previous time , large size of stone , boulders were dumped in the concrete foundation , the Contractor is warned once again that these foundations will not be paid and will be cancelled from the monthly interim payment .

#### 1) Comments on the last minute of meeting dated October 14, 2010

No comments from the Contractor.

No comments from EDTL

No comments from those present

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

#### 2) Progress of the works

##### **Transmission lines .**

During this month of October the progress along the transmission line was supposed to be increased considerably , almost double comparing to the previous month , but what has been promised by the Contractor is not seen in the field .

The daily quantity of work done remains very far below the minimum requirement.

The Contractor stated that during the month of November the situation will change to the best . Now two teams are doing tower erection and additional two teams will start in middle of November. We shall wait and see . In the mean time the delay in the time schedule is accumulating to a critical point .

From Liquica substation up to Lospalos substation there are 458 Towers (provisional number since field survey near substations has to be completed) .

The overall situation is summarized in the following table:

Section	excavation	concrete	Tower erection	Total number
Hera-Dili	28	27	27	30
Hera- Manat.	65	54	14	92
Manat.-Baucau	75	51	-	131
Dili-Liquica	44	22	- -	87
Baucau-Lospa.	-	-	-	118
TOTAL	213	154	41	458
<b>THIS Period of 14 days</b>	<b>38</b>	<b>42</b>	<b>11</b>	

The quantity of work done during this period from October 14 up to October 28 remains very low . The Owner is very concerned that the completion date of 31st December 2011 shall not be maintained .

The Contractor must constantly keep in mind that for every single calendar day . the minimum requirement is :

- - 4 (four) Excavation complete of tower foundations
- - 4 (four) Concrete complete of tower foundations
- - 4 (four) Erection complete of tower structure including tightening of bolts.

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

Tower foundations N1 is in process of excavation.

Tower foundation N30 , two legs remains to be excavated (problem with landowner still persist )

Tower Foundation to be concreted remain N1-N2 is in progress and N30 two legs Tower to be erected are N1-N2-N30

The Contractor stated that from November 1st preparatory works for stringing of the conductors shall start : installation of insulators , installation of running blocks and installation of protection over roads crossing .

The Contractor is reminded to submit on time the detailed description of the stringing method for approval.

Clearing right of way 25 m wide , the Contractor stated that this work started but problems are there with land owners when large size trees have to be cut .

#### DILI – LIQUICA ( 36.80 KM – 87 towers )

The excavation work is completed in 44 tower foundations (about 50% of the total) and is in progress in 7 foundations.

The concrete has been done in 22 towers foundations (about 25% of the total)

Tower erection will start in November , the towers just arrived in Dili port and the Contractor is looking for one area along the line to be used as temporary yard , those to avoid long distance transportation from Hera.

#### HERA – MANATUTO ( 41.500 KM – No. 92 towers )

The excavation work is completed in 65 tower foundations (about 70% of the total)and is in progress in 9 foundations .

The concrete has been done in 54 tower foundations (about 60% of the total)

The tower foundation No.27 is in progress , piling work is completed , and remains the concrete cap with anchor bolts to be concreted .

The towers erected are 14 (about 15% of the total)

#### MANATUTO – BAUCAU ( 50.065 Km -131 towers )

The excavation work is completed in 75 tower foundations (about 60% of the total) and is in progress in 13.

The concrete has been done in 41 tower foundations (about 40% of the total) .

Towers erection will start beginning of November since the steel structures for 100 towers have arrived at Dili port

#### BAUCAU – LOS PALOS ( 53.280 KM –118 towers )

No activity is reported . The Contractor stated that excavation works will start toward end of November.

#### BAUCAU – VIQUEQUE ( 64 KM – 96 towers)

No activity is reported . The cross section survey of the tower foundations is completed .

#### LIQUICA – MALIANA ( 63 KM – 112 towers )

The cross section survey of the tower foundations is in progress .

#### MALIANA – SUAI – CASSA – BETANO

Field survey work is in progress with one group of surveyors.

#### BETANO - VIQUEQUE

Plans and longitudinal profiles are under preparation

#### VIQUEQUE – LOSPALOS

The field survey is completed , plans and longitudinal profiles are under preparation

As stated by the Contractor the field survey near the substations have not been done as follow:

- VIQUEQUE : 3KM in the direction of Baucau , 1.5 KM in the direction of Betano , 1KM in the direction of Los Palos
- BAUCAU : 400 m in the direction of Viqueque , 300 m in the direction of Manatuto
- LOSPALOS : 9 KM in the direction of Baucau , 2 KM in the direction of Viqueque
- MANATUTO : 1.5 KM in the direction of Hera , 1.6 KM in the direction of Baucau
- LIQUICA : 1.2 KM in the direction of Dili , 1.1 KM in the direction of Maliana.

Concerning the Indonesian Contractors to be utilized for the construction of the portion of the transmission line along the South Coast the situation is as follow :

CNI22 is still negotiating with <DCP> Company from Surabaya for the section LiquicaMaliana-Suai . Quotation for the first section Liquica – Maliana has been submitted to CNI22 but from first analysis prices look to be very high, the subcontractor has been invited to review the prices and to submit a break down of the prices.

For the sections Suai-Cassa-Betano-Viqueque , CNI22 is in contact with <PT.KARYA LOGAM AGUNG> Company from Jakarta , people from this company are now inspecting the site and proposal with unit prices will be submitted soon .

For the section Viqueque – LosPalos a third contractor has sent its intension to submit a quotation .

## **Substations**

### **DILI SUBSTATION**

The remaining three foundations of the 150 KV steel structures have been completed, remain 14 small foundations blocks , the supports of the electrical equipment. The main cable trench is done for a total of 70 meter in length . .

On the 20KV Building work of brick wall started.

Foundations of the pump house are under preparation for concrete.

On the main control building for the columns and walls for the first floor above ground level the Contractor is authorised to use for the reinforcing steel bar size 22 instead of size 25 , the ship transporting the reinforcing steel size 25 is broken down and is not known when will be repaired

The two main transformers arrived at Dili port on 27 October together with other electrical equipment , the Contractor stated that as soon as the two transformers are transported and placed in the foundations a team of 20 workers will arrive from China (expected date 15 November) to start the erection of steel structures and electrical equipment.

### **MANATUTO SUBSTATION**

The work done in this time is 50 meter length of bricks fence wall which gives the total achievement about 80 % . External drainage ditch is also done in parallel with the wall. The Contractor stated that the foundation works will start in November by a team of 20 workers arriving from China. At present in Manatuto substation are working 30 Chinese and 40 locals .

### **BAUCAU SUBSTATION**

The Contractor stated that soil investigation will start in the coming week The civil work will be done by local subcontractor.

### **LOS PALOS SUBSTATION**

Local subcontractor will do the civil works and is now gathering material .

### **LIQUICA SUBSTATION**

Local subcontractor will start working in November.

### **MALIANA SUBSTATION**

No activity done .

### **SUAI SUBSTATION**

No activity done .

### **CASSA SUBSTATION**

No activity done .

## VIQUEQUE SUBSTATION

The local Subcontractor has started the work for the embankment and site levelling .

**The Contractor is reminded that at least temporary fence should be built in MalianaSuai-Cassa Substations in order to avoid that local villagers occupy the land.**

### Hera Power Plant

No activity is reported , except some finishing work in the retaining wall south side. Contractor stated that the steel plate for oil tanks are on board of the ship which had a breakdown and is now expected to arrive at Dili port on November 6

**The Contractor is reminded that major works to be completed are : Embankment , Drainage Canal up to the road crossing , Fencing Bricks Wall and there are no reasons to have stop for long time this activity.**

### Betano Power Plant

No activity

#### 3) Delivery of Material and Equipment

Material arrived in this period :

100 Towers for single circuit line .

Cable ACSR , OPGW , fittings for transmission line.

Steel structures for Dili Substation.

The two main transformers 31.5 MVA , CVT , CT , SA and various electrical equipment for Dili substation.

**The Contractor is WARNED once more that handling of the material, transporting, loading , unloading , storage continue to be UNACCEPTABLE , a lot of damages are caused.**

#### 4) Drawings and technical specifications

Drawings have been submitted in this period for Manatuto substation , for Liquica and for Dili Substation but no improvement in the quality of the presentation , Sichuan Electric Power Design Institute continue to produce the design with same mistakes as at the beginning , there are no way to have the Institute to follow the comments and recommendation done by the Consultant .

#### 5) Insurance

There is no precise information about this issue .

The Contractor stated that :

- Materials shipped are normally covered by marine insurance policy provided by the shipping agent .
- The workers are covered in case of accident by a insurance policy made in China by the Head Quarter .
- Concerning the All Risk Insurance requested in the contract , the Contractor is not covered and continues to work at his own risk .

The Consultant requested evidence of these insurance policies stipulated in China.

#### 6) Payments

All the payments have been made by the Owner , the interim payment certificate No.7 of the month of September is in process . Interim payment certificate No. 8 for the month of October is now under preparation .

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

Next meeting is scheduled for Thursday 16 November at 14:30 in Hera.

## FINANCIAL PROJECT STATEMENT

(pages 35-39 of original report)

### **1) Contract with CNI22**

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

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

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

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

#### **A. Disbursement Schedule:**

10% Advance Payment		\$ 36,713,122.00
• US \$ 10,000,000.00	Paid on April 2009	Against Bank Guarantee of same amount
• US \$ 10,550,000.00	Paid on December 2009	Against Bank Guarantee of US \$ Twelve Million
• US \$ 1,450,000.00	Paid on February 2010	Covered by above Bank Guarantee
• US \$ 14,713,122.00	Paid on August 2010, covered by the performance security of US \$ 36,713,122.00	

90% of the contract price ----- \$ 330,418,102.00  
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:

Interim payment No.	Gross amount US\$	Net Amount US\$
1	5,872,855.58	4,699,733.18 paid
2	4,117,847.41	3,294,319.58 paid
3	3,439,526.40	2,756,729.20 paid
4	800,321.83	640,257.46 paid
5	4,891,259.53	3,915,378.36 in process
6	5,569,325.60	4,456,218.22 paid
7	13,593,524.11	10,877,498.39 in process
8	10,454,635.75	8,374,646.12
<b>Total</b>	<b>48,739,296.21</b>	<b>39,014,780.51</b>

The cost for the management and operation in the amount of US \$ 3,000,000.00 per year per a period of 5 years, shall be disbursed starting from the date of issuance of Operational Certificate.

**The summary (gross amount) of above interim payments represents 17.65% of the Power Grid contract Price (US \$ 276,092,847.00).**

## **2) Contract with Puri Akraya Engineering Limited**

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

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

### **A. 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 .



## B. Expected Budget of Performance

### 1. WORKS & SUPPLY

Year	Monthly Schedule of Disbursement (USD)				Amount
	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
2009		10,000,000.00		10,550,000.00	10,550,000.00
2010	Feb-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	1,450,000.00	9,990,702.99	27,324,566.81	85,915,281.42	124,680,551.22
2011	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	80,000,000.00	100,000,000.00	100,000,000.00	100,000,000.00	380,000,000.00
2012	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	30,000,000.00	30,000,000.00	30,000,000.00	23,431,418.78	113,431,418.78
	<b>TOTAL</b>				628,661,970.00

### 2. MANAGEMENT & OPERATION

Year	Monthly Schedule of Disbursement (USD)				Amount
	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
2012		750,000.00	750,000.00	750,000.00	2,250,000.00
2013	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	750,000.00	750,000.00	750,000.00	750,000.00	3,000,000.00
2014	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	750,000.00	750,000.00	750,000.00	750,000.00	3,000,000.00
2015	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	750,000.00	750,000.00	750,000.00	750,000.00	3,000,000.00
2016	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	750,000.00	750,000.00	750,000.00	750,000.00	3,000,000.00
2017	Jan-Mar	Apr.-Jun	Jul-Sep	Oct-Dec	
	750,000.00				750,000.00
	<b>TOTAL</b>				15,000,000.00

#### NOTE:

Expected payments done by the Owner in accordance with the progress of the works

*(pages 50-57 of original report)*

## **a) Summary of Contracts Contractual Data**

### **a-1 The 2<sup>nd</sup> Amendment to Contract Agreement No. RDTL – 812931 now effective as from December 21, 2009.**

#### **SCOPE OF WORKS:**

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

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

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

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

#### **CONTRACT PRICE:**

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

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

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

above yearly amount.

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

Hera 120 MW  
Betano from 60 MW to 130 MW

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

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

**Power Grid (transmission lines and substations including 20KV distribution line ) US \$ 276,092,847.00**

**Hera Power Plant US \$ 164,532,257.00**

**Betano Power Plant US \$ 188,036,866.00**

-----  
**TOTAL US \$ 628,661,970.00**

**To the above figure should be added the cost related to additional works not originally foreseen in the contract such as the Jetty to unload and pump the HFO to the tanks and all administrative buildings.**

**This additional costs are now under evaluation and will be inserted in the next monthly report.**

## SUMMARY OF CONTRACT STATUS

### I. HERA POWER PLANT

The only activity reported is the pointing work done in the retaining wall. Construction of the steel tanks is postponed , the steel plates arrival at Dili port is not known yet.

The Indonesian Contractor <Puri Akraya Engineering Limited> that shall make the installation of Wartsila Generating Sets will do mobilization soon after advance payment is received.

### II. BETANO POWER PLANT

No activity. The Indonesian Contractor < Pun Akraya Engineering Limited> that shall make the installation of Wartsila Generating Sets will do mobilization soon after advance payment is received .

### III. SUBSTATIONS

- DILI SUBSTATION

The activity is concentrated in the civil works:

- Bricks fencing wall plastering is in progress along the river side.
- For the 20KV Building the construction of the external bricks wall has started .
- For the Main Control Building the work is now centered in the preparation for the upper concrete structure above ground level.
- The foundations of the 150KV outdoor steel structures are 100% done, while the support foundations of the electrical equipments are 90% done.
- The main cable trench is done for a length of 70 m.
- Works on the pump house foundation are also in progress.

- MANATUTO SUBSTATION

The only activity done is the construction of the fence brick wall with the adjacent drainage ditch , 80% is the progress achieved.

- BAUCAU SUBSTATION

No activity is reported .

- LOS PALOS SUBSTATION

No activity is reported.

- LIQUICA SUBSTATION

No activity is reported.

- MALIANA – SUAI – CASSA

No activity is done on these places , all substations sites are free for the Contractor to mobilize in except Suai for which the eight (8) land owners are still waiting for the compensation as agreed with Land and Property Department .

- VIQUEQUE SUBSTATION

Local subcontractor has started working on site leveling and Embankment preparation.

### IV. TRANSMISSION LINES

- HERA – DILI (9.89 KM) total number of double circuit towers: 30 units.
  - Total number of tower foundations excavated: 28

- Total number of tower foundations concreted: 27
- Total number of towers erected 27
- HERA – MANATUTO (41.5 KM) total number of double circuit towers : 92 units.
  - Total number of tower foundations excavated: 65
  - Total number of tower foundations concreted: 54
  - Total number of towers erected 14
- MANATUTU – BAUCAU (60.00 KM) total number of single circuit towers:127 units.
  - Total number of tower foundations excavated: 75
  - Total number of tower foundations concreted: 51
  - Total number of towers erected 0
- BAUCAU – LOS PALOS (53.28 KM) total number of single circuit towers :118 units.  
No activity done.
- BAUCAU – VIQUEQUE (64.00 KM) total number of single circuit towers : 96 units.  
The only activity done is the cross section of each tower location.
- DILI – LIQUICA (36.84 KM) total number of single circuit towers : 87 units.
  - Total number of tower foundations excavated : 44
  - Total number of tower foundations concreted : 22
- LIQUICA – MALIANA (63.0 KM) total number of single circuit towers : 112  
The only activity in progress is the cross section of each tower location.
- MALIANA – SUAI  
Field survey activity is in progress .
- SUAI – CASSA  
No activity is reported
- CASSA – BETANO  
No activity is reported
- BETANO – VIQUEQUE  
No activity is reported.
- VIQUEQUE – LOSPALOS  
The field survey works has been completed .

*(pages 68-70 of original report)*

**c-2 Contractor's Personnel  
Management at Site**

<b>CNI22 Staff</b>	<b>Position</b>
1. Li Tao	General Manager
2. Wu Yongjun	Chief Engineer
3. Pang Yujun	Manager
4. Han Fei	Doctor
5. Wang Fachun	Doctor
6. Guo Ke	Quantity Surveyor
7. Xu Bin	Quantity Surveyor
8. Fan Qingmei	Data Base
9. Huang Wan	Data Base
10. Li Chao	Electrical Engineer
11. Li Daowei	Electrical Engineer
12. Shen Gaoqi	Electrical Engineer
13. Liu Jie	Electrical Engineer
14. Song Wei	Electrical Engineer
15. Chen Hongfen	Accountant
16. Sun Yun	Accountant
17. Zhang Dejun	Laboratory Engineer
18. Zheng Jie	Laboratory Technician
19. Chen Linshan	Logistics
20. Gao Hongchuan	Logistics
21. Peng Huabin	Logistics
22. Zheng Shuwu	Logistics
23. Han Yadong	Equipment Department
24. Shi Chenyang	Equipment Department

**c-2 Contractor's Personnel  
Present at Site**

<b>CNI22 Staff</b>	<b>Number</b>
Cook	6
Driver	5
Material Department	6
Interpreter	8
Mechanic/Equipment/Machine	6
Structural Erector/Welder	4
Designer	15
<b>Total</b>	<b>74</b>
<b>Transmission Line:</b>	
Manager	1
Engineer	12
Technician	30
Interpreter	2
Surveyor	6
Driver	3
Skilled Worker	183
<b>Total</b>	<b>237</b>

<b>CNI22 Staff</b>	<b>Number</b>
<b>Substation:</b>	
Manager	1
Engineer	7
Technician	2
Cook	3
Driver	2
Surveyor	3
Operator	5
Skilled Worker	60
Guard	2
<b>Total</b>	<b>80</b>
<b>Hera Power Plant:</b>	
Manager	1
Engineer	6
Technician	3
Mechanic	4
Skilled Worker	20
Driver	10
<b>Total</b>	<b>44</b>
<b>Total Chinese</b>	<b>435</b>
<b>CNI22 Staff ( Local )</b>	
Hera Power Plant	54
Betano Power Plant	---
Manatuto Substation	18
Dili Substation	45
Baucau Substation	---
Transmission Line	280
<b>Total Local</b>	<b>397</b>
<b>Grand Total</b>	<b>832</b>

*(pages 105-118 of original report)*

## **a) ENVIRONMENTAL MANAGEMENT PLANS**

**October 2010**

### **A. INTRODUCTION**

An Environmental Management and Monitoring Plan (EMMP) was prepared by the Consultants (ELC in association with Bonifica S. p. A.) in August of 2009 for the National Electrical Power System For Timor Leste (Contract RDTL-92896). The Contractor - China Nuclear Industry 22nd Construction Company Limited (CNI22) – signed the Commitment Letter for the implementation of the EMMP in late March of 2010 binding the Company (CNI22) to the tenets and requirements of the said EMMP. This report discusses the status of the implementation of the EMMP as of May 2010. Areas covered by this report are the following:

Hera Power Plant Site  
Transmission Towers from Hera to Dili  
Dili Sub-station

### **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 – 630 kilometers
- Distribution lines linking the High Voltage Grid to the existing Medium Voltage Grid

### **C. ENVIRONMENTAL REGULATORY REQUIREMENTS FOR TIMOR LESTE**

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

### **D. ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN**

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

### **1. ENVIRONMENTAL MANAGEMENT**

The Environmental Management Plan (EMP) is designed to ensure that the mitigating measures recommended to prevent or control the negative impacts of the different aspects of the project on environment, life, and property are properly followed, while positive impacts are enhanced to gain maximum benefits from the project. Table 1 presents the Summary Environmental Management Checklist as of May 2010.



*(The report as produced by EB repeats this page twice. However, this table is unchanged from the September 2010 report.)*

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE		RESPONSIBLE ENTITIES	REMARKS
			YES	NO		
ESTABLISHING CONSTRUCTION SITES	Soil Erosion due to exposure of topsoil	Re-vegetate when possible and practicable		X	CNI22/ CSC/EDTL	No re-vegetation of cleared areas has been undertaken to date.
	Generation of solid waste	Prepare Solid Waste Management Plan (SWMP)		X	CNI22/ CSC/EDTL	No SWMP have been prepared by the Contractor to date.
	Conflicts with local residents	Undertake consultations with local residents	X		CNI22/ CSC/EDTL	Proper consultations with the local leaders and communities have been undertaken primarily by the Consultants. This is an on-going activity.
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Acute elevated levels of TSP/SO2/NOx	Minimize and control dust generation through regular spraying of exposed areas	X		CNI22/ CSC/EDTL	Undertaken daily
		Regular maintenance of heavy equipment, vehicles and machineries	X		CNI22/ CSC/EDTL	Undertaken regularly
	Siltation and sedimentation of nearby water bodies	Containment and construction of siltation ponds and silt curtains		X	CNI22/ CSC/EDTL	The Contractor has not complied with this requirement.
		Minimum vegetative removal	X		CNI22/ CSC/EDTL	
		Proper management, handling and disposition of spoils and unsuitable materials	X		CNI22/ CSC/EDTL	
	Contamination of nearby water bodies	Installation of oil and grease traps in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas		X	CNI22/ CSC/EDTL	The Contractor has not complied with this requirement.
		Construction of bund walls of adequate capacity around fuel, oil and solvent storage tanks	X		CNI22/ CSC/EDTL	Construction of Fire Bank (Bund Wall) for the Tank Farm is on-going. This need to be clarified with the Contractor as the dimensions of the said Fire Bank can contain only less than 60% of the total materials stored in the Tanks
		Proper handling and storage of petroleum products and toxic and hazardous substances	X		CNI22/ CSC/EDTL	
		Installation of sanitation facilities in camps and site offices	X		CNI22/ CSC/EDTL	The main facility is adequately provided with the requisite sanitation facilities, however, the makeshift camp located Just beside the main facility where the workers of the Transmission

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE		RESPONSIBLE ENTITIES	REMARKS
			YES	NO		
ESTABLISHING CONSTRUCTION SITES	Soil Erosion due to exposure of topsoil	Re-vegetate when possible and practicable		X	CNI22/ CSC/EDTL	No re-vegetation; of cleared areas has been undertaken to date.
	Generation of solid waste	Prepare Solid Waste Management Plan (SWMP)		X	CNI22/ CSC/EDTL	No SWMP have been prepared by the Contractor to date.
	Conflicts with local residents	Undertake consultations with local residents	X		CNI22/ CSC/EDTL	Proper consultations with the local leaders, ;and communities have been undertaken primarily by the Consultants. This is an on-going activity.
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Acute elevated levels of TSP/SO <sub>2</sub> /NO <sub>x</sub>	Minimize and control dust generation through regular spraying of exposed areas	X		CNI22/ CSC/EDTL	Undertaken daily
		Regular maintenance of heavy equipment, vehicles and machineries	X		CNI22/ CSC/EDTL	Undertaken regularly
	Siltation and sedimentation of nearby water bodies	Containment and construction of siltation ponds and Silt curtains		X	CNI22/ CSC/EDTL	The Contractor has not complied with this requirement.
		Minimum vegetative removal	X		CNI22/ CSC/EDTL	
		Proper management, handling and disposition of spoils and unsuitable materials	X		CNI22/ CSC/EDTL	
	Contamination of nearby water bodies	Installation of oil and grease traps; in drainage systems from workshops, vehicle and plant washing facilities and service and fuelling areas		X	CNI22/ CSC/EDTL	The Contractor has not complied with this requirement.
		Construction of bund walls of adequate capacity around fuel, oil and solvent storage tanks	X		CNI22/ CSC/EDTL	Construction of Fire tank (Bund Wall) for the Tank Farm Is on-going. -This need to be clarified with the Contractor as the dimensions of the; said Fire Bank can contain only less than 60% of the total materials stored In the Tanks
		Proper handling and storage of petroleum products and toxic and hazardous substances	X		CNI22/ CSC/EDTL	
		Installation of sanitation facilities in camps and site offices	X		CNI22/ CSC/EDTL	The main facility is adequately provided with the requisite sanitation facilities, however,, the makeshift camp located just beside the main facility where the workers of the Transmission Tower Construction group are housed does not have the proper sanitation facilities. The wastewater for the facility is discharged into an open canal located at the entrance of the facility.

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE		RESPONSIBLE ENTITIES	REMARKS
			YES	NO		
		Installation of waste treatment facilities in ancillary facilities such as batching plants and related facilities		X	CNI22/ CSC/EDTL	None
	Acute elevated levels of noise	Operation of heavy equipment and other appurtenant facilities will be limited during daytime - 0800-1700. Should operation beyond these hours is required, proper notification shall be given the concerned local government officials	X		CNI22/ CSC/EDTL	On-going
		Regular maintenance of heavy equipment and machineries	X		CNI22/ CSC/EDTL	On-going
		Establishment of buffers between nearby settlement areas and work areas		X	CNI22/ CSC/EDTL	None
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Loss of habitat	Cutting of trees and clearing off vegetative cover to be undertaken only when necessary	X		CNI22/ CSC/EDTL	200 trees have already been cut as a result of clearing and grubbing activities for Hera Plant Site, Dili Substation and Transmission Towers for Hera to Dili Substation Line. Total number of trees for the other facilities and Transmission Towers are yet to be counted pending the conduct of the survey
		Relevant permits and clearances will be secured prior to cutting and clearing activities		X	CNI22/ CSC/EDTL	No permit have been presented by the Contractor
	Migration/Loss of wildlife	Habitat development and generation through planting of indigenous species		X	CNI22/ CSC/EDTL	None
		Re-vegetation of cleared areas		X	CNI22/ CSC/EDTL	None
	Loss of aesthetic values	Landscape development and design when possible and practicable		X	CNI22/ CSC/EDTL	None

CNI22 - Contractor, China Nuclear Industry 22 Construction Company Ltd.; CSC - Construction Supervision Consultants; EDTL - Electricidade Da Timor Leste; DoE - Directorate for Environment

#### **A) DESIGNATION OF AN ENVIRONMENTAL OFFICER**

The Contractor – China Nuclear 22nd Industry Company – has on-site the following personnel designated as Safety and Environmental Officers: Mr. Cai Hui, Mr. Lui Jianguo, Mr. Wang Jinan, Mr. Chen Jiangtao

#### **B) DESIGNATION OF A HEALTH/MEDICAL OFFICER**

The Contractor – China Nuclear 22nd Industry Company – has on-site Dr. Wang as the designated Health/Medical Officer. However, the medical officer services both the Hera Facility and the Dili Sub-Station Facility.

#### **C) PREPARATION OF HEALTH AND SAFETY (HSP) AND SOLID WASTE MANAGEMENT PLANS**

Attachment 1 presents the Quality, Health, Safety and Environment Management System. The QHSE Management Plan does not contain the requisite operational details and should be revised to include this. The Contractor – CNI22 - has yet to prepare the Solid Waste Management Plan for the facilities.

#### **D) SPILL CONTINGENCY/EMERGENCY RESPONSE PLAN**

Attachment 2 presents the Site Emergency Contingency Plan. The Plan (Site Emergency and Contingency Plan) as prepared sorely lacks the necessary operational details required. This should be revised to include this. The Oil Spill Contingency Plan (as per information from the Contractor) will be prepared after the Oil Tanks are erected.

#### **E) PREVENTION OF POLLUTION (AIR, WATER AND NOISE)**

Regular wetting/watering of exposed grounds to prevent re-suspension of particulates is undertaken daily. Regular maintenance of equipment and facilities to mitigate emission of noxious fumes and gases is an on-going activity. Sanitary facilities are provided in the main camp in Hera, however the area where the makeshift camp of the Transmission Tower Construction Group is located does not have the proper sanitation facilities. The Contractor has prepared a Site Emergency and Contingency plan (Attachment 2) but this lacks the necessary operational details required in such a plan. This has to be revised to conform to acceptable standards. Operation of heavy equipment and related machinery are operated on a normal basis only from 8:00AM to 5:00PM.

#### **F) PROTECTION OF TREES AND VEGETATION**

Clearing of areas with trees and vegetation are only undertaken in required areas.

#### **G) RELATIONS WITH LOCAL COMMUNITIES AND AUTHORITIES**

Consultations are regularly conducted with the affected communities by the Consultants to inform the local leaders and populace of the on-going works. This serves as a monitoring activity as to the issues and concerns of the stakeholders relevant to the project. As in most projects of this type, land acquisition and hiring of local workers is the major issue that normally arises. The ROW acquisition for Facilities and Transmission Towers, which is the responsibility of the GoTL, has been adequately and expeditiously addressed. Currently the contention between the Contractor, the affected communities and the Owner is the acquisition of ROW for access road which is the responsibility of the Contractor. This has yet to be properly resolved.

#### **H) PRIVATELY OR COMMUNITY OWNED SERVICES AND STRUCTURES**

Compensation for private property that have been affected by the works are expeditiously addressed by the GoTL. Public services have not been affected by the current works.

## **I) OCCUPATIONAL HEALTH AND SAFETY**

### **PROTECTIVE CLOTHING AND SAFETY EQUIPMENT**

Workers are provided the basic PPE such as hard hats (Timorese and Chinese) and safety shoes (only for Chinese workers. Consultants were provided safety shoes and hard hats by ELC & Bonifica.

### **MEDICAL AND FIRST AID FACILITIES**

The Contractor has on-site (Hera Power Plant Facility) a room designated as a clinic and a Medical Officer to service the medical requirements of the workers. The Medical Officer, however, also services the requirements of the workers in the Dili Sub-Station. As per information from the Contractor, major medical concerns of the workers are referred to the Chinese Volunteer Medical Group of the Chinese Contingent of the United Nations in Dili. Medical records of cases handled by the medical officer to date have been formally requested from the Contractor but these have yet to be provided to date.

### **SUPPLY OF DRINKING WATER AND SANITATION**

The water supply both for drinking supply and domestic usage for the facility is sourced from groundwater sources within the Hera Power Plant Facility. The raw water passes through a three stage treatment before distribution. As per information provided by the Contractor, the average daily extraction is 65m<sup>3</sup> or a total volume of 7,800m<sup>3</sup> since induction of the Contractor on-site in January 2010. Sanitation facilities address the waste water discharge generated in the facility. Data provided by the Contractor indicate that the average discharge of wastewater is 40m<sup>3</sup> per day or a total volume of 4,800 m<sup>3</sup> since mobilization of Contractor on-site.

### **TEMPORARY FACILITIES FOR WORKERS INCLUDING SANITATION AND WASTE DISPOSAL**

Temporary facilities and accommodations for workers in the facilities have been made available by the Contractor in the main facility. This includes sanitation facilities such as toilet and bath areas with the requisite septic tanks. Waste disposal receptacles are located in strategic places for wastes generated from the daily personal and operational activities. These receptacles are emptied and disposed regularly through the local waste disposal system.

The Tower Transmission Construction Group is housed in makeshift (scaffolding covered by laminated sack) structures adjacent to the main facility. The temporary facilities provided these workers are unacceptable and highly deplorable. The toilet and bath facilities provided the workers are unsanitary and unhygienic and is not within acceptable sanitation standards. This is a great risk to the health and well being of, not only the workers residing in the area but also the workers in the main facility. Ample space are still available in the main facility and could accommodate these workers.

### **TRAFFIC MANAGEMENT**

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

## **2. ENVIRONMENTAL MONITORING**

An integral part of the environmental protection is the continuous monitoring of the condition of the receiving environment to determine if any undesirable changes are occurring as a result of the project. The effects to the living receptors are received mainly through the surface water, air and surrounding area. Environmental monitoring principally requires quantitative measurements of the amount of pollutants present in the environmental media.

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

The Contractor have not submitted any monthly environmental management and monitoring report since mobilization in January 2010. As per the EMMP prepared for the Project, the Contractor has not prepared a single monthly report covering the implementation of the EMMP and discussing the environmental aspects of the project. A format for the Monthly Environmental Management and Monitoring Report is provided in Annex B of the EMMP.

### 4. ISSUES AND CONCERNS

- The EMMP stipulates that a Baseline Survey for Air, Noise and Water Quality. The Contractor has not yet conducted this activity to date. This is non-compliance to the EMMP of the Project.
- The EMMP stipulates that Monthly Environmental Monitoring for Air, Noise and Water Quality be conducted as expounded in Table 3 of the said EMMP. The Contractor has not yet conducted this activity to date. This is non-compliance to the EMMP of the Project.
- As per the EMMP, the Contractor should submit a Monthly Environmental Management and Monitoring Report, the format for which is presented in Annex B of the said EMMP. To date the Contractor have never submitted such report.
- • Conflicts with the local populace have arisen as a result of acquisition of ROW, specifically for access roads for Tower 26, 27, 28 and 29. This should be resolved soonest to preclude further deterioration of relations with the communities.
- Corollary to the above, a formal grievance and complaints desk should be established by the Contractor in the facilities to receive complaints, issue and concerns of the stakeholders. The Contractor should have on his staff a Community Relations Officer (CRO) that will liaise and coordinate with the local communities together with the local staff of the Consultants. This will mitigate the occurrence of social conflicts and effect a smoother flow of the works.
- There has been no re-vegetation of the cleared areas undertaken by the Contractor to date. This is critical since 14 of the Transmission Towers (Her Power Plant to Dili Sub Station) are located in steep slopes and is highly prone to erosion. Immediate re-vegetation of these areas should be undertaken to prevent erosion of the slopes. Furthermore, areas cleared in the Hera Power Plant and Dili Sub Station which will not be worked on anymore should be immediately re-vegetated to minimize the generation of dust (Particulate Matter) which could give rise to unsafe working conditions and in the extreme upper respiratory diseases.
- As stipulated in the EMMP (see Item 4.1.3) the Contractor should prepare a Solid Waste Management Plan and submitted to the Consultants within one (1) month of his arrival on-site. The Contractor has yet to comply with this requirement\_
- The Contractor has not constructed siltation ponds to address discharge of silted runoff into nearby receiving bodies of water. During heavy rains, run-off from bare areas is heavily laden with materials that contribute to the siltation of the nearby sea.
- Oil and grease traps in drainage systems from workshops, vehicle washing facilities and service and fuelling areas have yet to be installed by the Contractor. This should be immediately complied with to prevent further degradation of the nearby water bodies which is the ultimate depository of the wastewater being discharged by the facility.
- As per the EMMP, the Contractor is obligated to secure the requisite Environmental Permits and Clearances from the National Directorate for Environmental Conservation. To date, the Contractor has not presented the necessary Development Permits and Clearances as required by the National Laws, Rules and Regulations of the GoTL.
- Appurtenant pollution control devices should be installed in the ancillary facilities such as the Batching Plant within the Hera Power Plant. Particulate Matter (PM) and wastewater generated by the operation of the plant need to be addressed to mitigate health risk to workers and mitigate further degradation of nearby water bodies.

- Buffer zones should be established between the facilities and the surrounding settlement areas. This would prevent nuisance to the populace living within the periphery of the facilities and mitigate/eliminate adverse impacts to the surrounding communities.
- The Site Emergency Contingency Plan and the Quality, Health, Safety and Environment Management System as prepared by the Contractor are barely adequate and should be revised to include pertinent operational details. The Oil Spill Contingency Plan should be drafted soonest and should not be prepared only upon installation/erection of the Tanks.
- The Contractor need to provide a separate medical facility for the Dili Sub Station with the requisite medical officer, equipment and supplies. The current practice is for the Medical Officer assigned in the Hera Power Plant also serves the medical requirements of the workers in the Dili Sub-Station.

## QUALITY CONTROL

The procedures implemented to all the activities in this project shall be in strict compliance to the International Standard Practice .

### A. RECEIVING SECTION

- Handling, storage and preservation of materials and equipments at the designated stock yard; Visual inspection of the materials and receiving verification of Manufacturer's Certificate,

### B. INSTALLATION

- *Grade & site inspection*
- *Formwork inspection*
- *Reinforcing Bars and embedded items inspection*
- *Gravel and sand visual inspection for impurity and soil content*
- *Concrete Sampling, Testing & Concrete Placing observation*
- *Testing, calibration and commissioning of concrete Batching Plant*

## SAFETY

The overall safety program is still below the standard construction practice and the Consultant is imposing strict procedures to avoid any accident throughout the duration of the project.

### DILI SUB STATION AND HERA POWER PLANT

- ✓ Warning sign showing «you are entering a construction area» Ex. CAUTION DRIVE WITH CARE CONSTRUCTION AREA AHEAD; SLOW DOWN EQUIPMENT CROSSING etc. to be place visibly before and after the main gate at least 50 meters.
- ✓ At excavation place warning signboard such as; DEEP EXCAVATION
- ✓ To any moving equipments such as crane; DANGER HEAVY LIFTING IN PROGRESS.
- ✓ ALWAYS PUT LADDER for excavation exceeding 1.5 meter depth and put railings to any working platform with a minimum height of 2.0 meters above the ground surface.
- ✓ Place at the main gate of every site signboard — SAFETY BEGINS HERE, ALWAYS WEAR YOUR (PPE) PERSONAL PROTECTIVE EQUIPMENTS, hard hat, safety shoes and proper working clothes .

### TRANSMISSION LINES

- ✓ Foundation area to be circumscribed with RED/YELLOW WARNING RIBBON to keep onlookers away.
- ✓ In each excavation pit , a LADDER must be placed for fast evacuation of workers in case of danger.
- ✓ Place on every foundation place the safety sign-boards : SAFETY BEGIN HERE , ALWAYS WEAR THE PERSONAL PROTECTIVE EQUIPMENT , hard hat , safety shoes , safety gloves, and proper working clothes.
- ✓ For towers erection and conductors stringing sign-boards : ALWAYS WEAR SAFETY HAT, SAFETY BELT, SAFETY SHOES , SAFETY GLOVES and PROPER WORKING CLOTES.

## **PROBLEMS / ISSUES AND RECOMMENDATIONS**

### **Problems/Issues Encountered:**

1. Communication problems for technical staff and workers of the contractor who cannot speak nor understand the English Language.
2. Constantly delay in submission of Construction Drawings for Consultant's review and approval.
3. Supervisors of the Consultant are obliged to be constantly present on site otherwise the quality of workmanship is deteriorating due to the carelessness of the Contractor workers either unskilled or of very low capability.
4. No cohesive planning department of the Contractor to make a constantly follow up of the office and of the field activities.
5. Mishandling of materials ( Galvanized steel structure , Conductors , insulators , fittings ) during unloading, loading and transporting from the yard to the site. Materials dumped in muddy soil.
6. Safety practices at the jobsite are far below regulations .
7. Environmental negligence on site , left over debris and garbage .
8. Obstructions made by Landowners who oppose any construction inside their property without compensation.

### **Recommendations/Actions:**

1. The Contractor must provide technical staff fluent or an average understanding of the English language to facilitate easy communications and field instruction.
2. The Contractor is always reminded/instructed to submit on time the construction drawings to avoid delay for the review and approval.
3. The Contractor is verbally instructed that supervisors, particularly QA/QC personnel, must be always present on site to inspect and monitor that the work activities are carried out according to the plans and specifications.
4. The Contractor is reminded that Planning Engineer must keep an eye with the progress according to the approved time schedule. Keep the record , update daily the general accomplishments and find remedy to recover delay .
5. The Contractor is reminded that more qualified staff is required to handle the materials to prevent being damaged during loading , unloading and transporting to the site. Any damaged material will be rejected and must be replaced at no additional cost , all that will cause inevitable delay and additional costs for the Contractor .
6. The Contractor is reminded to supply the workers with Personal Protective Equipment (PPE), which must be worn on the jobsite always. Provide barricades to every excavation or provide warning tape around the excavation clearly visible at all times.
7. All completed works on site must be cleaned free from left over from the construction materials used and others rubbish in order to prevent environmental pollution.
8. Contractor must familiarize himself to manage with the local community whenever entering to the property prior to start the works.