Scanned and excerpted from the February 2011 Report of the Construction Supervisor for the Nationwide Electrical Power Grid and Power Plant and its Facilities by La'o Hamutuk

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

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GOVERNMENT OF THE DEMOCRATIC REPUBLIC OF TIMOR LESTE

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

Monthly Progress Report
February 2011

Rev.	Date	Myrna B. Sacramento Author	Zoltan Lukacsi Checked	Felice Maffei Approved

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

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No. of Pages:135
Date :March 10, 2011

PROJECT REPORT

EXECUTIVE SUMMARY

(pages 8-12 in original report)

For the Month of February 2011

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

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

Inability to make a good planning of the works and to accelerate the activities wherever there are no hindrances continue to be one of the main problem of the contractor , for example inside the substations buildings in Dili and Manatuto many works could be easily done regardless of the atmospheric conditions .

The activity of CNI22 is now deployed from Liquica substation to Lospalos substation covering the totality of the northern part of the Power Grid , but although a large number of workers and of equipment are added to the organization the production in this month of February remain very low almost unnoticeable , either along the transmission line as well as in the substations. The Consultant and EDTL are making a lot of pressure on the Contractor , but useless , in the contrary is always plaintive if some landowners make obstacle .

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

On the other side the Contractor for the Power Plants PAE < PuriAkraya Engineering > has substantially completed the construction of the temporary facilities in Hera according to the plan submitted . Basic Design Drawings of Hera Power Plant have been submitted to the Consultant for review and comments.

Preparation of the contract's Supplemental Agreement , negotiations with banks for Advance Payment Bond for Betano and procedures for the Letter of Credit are proceeding speedly.

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

Dili Substation

- The permanent fence remains the same as previous situation , uncompleted , 120 meters remains to be done in the front side , the Consultant instructed the Contractor for several time to provide temporary fence on this part to avoid intrusion of outsiders into the construction site.
- The firefighting water reservoir is complete with the remaining activity to be done are as follows; plastering of interior wall using water proof cement plaster, interconnection of the water pipes into the pump house
- The emergency oil tank , construction of the main structure is completed , the plastering with waterproof cement including the piping connection have to be done.
- Pump house – the structure is complete except the mechanical works and the building architectural finishing.
- 20 KV building – the bricks walls were completely done including the plastering of the exterior and interior surface , polishing and smoothing the reinforced concrete structures which is a time consuming work has yet to be done . Floor slab in the area occupied by the switch board panels is under preparation with the installation of the equipment supports C-channel which requires a perfect level .

- Main Control Building – Internal bricks walls in the first floor are under construction , embed PVC conduits for lightings installed ; continue the compaction of soil at ground floor, construction of the cable trench connecting to the main transformer and the 20KV building in progress . The sanitary pipe lines at the ground floor have been placed
- 150 KV area – Erection of the steel structures is 70% completed .
- Cable Trench along the Capacitor perimeter – Excavation started and the bedding course was done including the installation of drainage pipe which connect the emergency oil tank.
- Guard House – Bricks walls internal and external are done remain plastering

The overall accomplishment of Dili Substation civil works is 80% .

Manatuto Substation

- Fence walls — No further works done , progress remains at 60% of the entire length .
- 150 KV area — Main foundations are completed including all the small support foundations . Main cable trench is excavated and bedding course been done for the 60 meters length.
- Main Transformer Foundation — Completed the transformer support foundations
- Main Control Building — Completed the preparation for concreting of the roof slab
- Guard House — No activity
- 20KV Switch Gear Building — All columns above ground level are done and preparation work for the roof is on going .

Viqueque

- Site leveling has been completed . No other activity.

Liquica Substation

- Continue the facilities erection and at the same time started the excavation of the main transformer foundation .
- 150KV area — No. 4 foundations of the supporting structures have been done . Deep water well drilling reached to a depth of 85 meters but no substantial quantity of water was encountered and drilling shall be continued to around 95 meters .

Baucau, Lospalos, Maliana, Suai, And Cassa Substation

- Baucau — Site leveling is on going and about 85% completed
- Lospalos — Site leveling on going and about 90% completed. Excavation for the wall fence has started and ready for the bedding concrete.
- Maliana — After the soil investigation, no other physical activity is carried out .
- Cassa — The contractor is negotiating with the local community the compensation to be paid for shifting the site of 55 meters in a more convenient and easy place .
- Suai — No Activity

Hera Power Plant

- CNI22 is proceeding with the construction of Oil Tanks .
  The roof (dome) of all 8 tanks is done.
  In two 5,000 M3 tanks the roof has been lifted and construction of the walls reached the height of 5 meters .

Betano Power Plant

No activity

Transmission Lines

- **Hera — Dili : Total number of Double Circuit Towers = 30 units** (9.89 Km)

Total number of Tower Foundation Excavated	= 30
Total number of Tower Foundations Concreted	= 30
Total number of Tower Erected	= 29

Total number of Tower —Stringing of Conductor = 27

- **Hera — Manatuto : Total number of Double Circuit Towers = 91** units (40.83 Km)
  Total number of Tower Foundation Excavated = 82
  Total number of Tower Foundations Concreted = 81
  Total number of Tower Erected = 79
  Total number of Excavation in progress = 3
- **Manatuto — Baucau : Total number of Single Circuit Tower = 132 units** (51.87 Km)
  Total number of Tower Foundation Excavated = 123
  Total number of Tower Foundations Concreted = 117
  Total number of Tower Erected = 115
  Total number of excavation in progress = 1
- **Baucau — Lospalos : Total number of single circuit tower = 118 units** (53.28 Km)
  Total number of Tower Foundation Excavated = 36
  Total number of Tower Foundations Concreted = 16
  Total number of Tower Erected = 0
  Total number of excavation in progress = 33
- **Baucau — Viqueque :Total number of single circuit tower = 96 units** (64.00Km)
  Total number of Tower Foundation Excavated = 22
  Total number of Tower Foundations Concreted = 11
  Total number of Tower Erected = 0
  Total number of excavation in progress = 22
- **Dili — Liquica : Total number of single circuit tower = 87 units** (38.82 Km)
  Total number of Tower Foundation Excavated = 73
  Total number of Tower Foundations Concreted = 70
  Total number of tower Erected = 49
  Total number of excavation in progress = 1
- **Liquica — Maliana : Total number of single circuit tower = 112 units**
  The Indonesian contractor TEHATE is in the stage to mobilize equipment and personnel to start foundation works .
- **Maliana — Suai**
  No field activity done
- **Suai — Cassa**
  Geotechnical soil investigation is in progress
- **Cassa — Betano**
  No field activity done
- **Betano — Viqueque**
  The Contractor is installing facilities in three area to accommodate the Chinese workers.
- **Viqueque — Lospalos**
  The Contractor is coordinating site visit with local Chefe Suco in order to seek collaboration from local communities .

(pages 13-29 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 : February 17 , 2011

Participants :

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

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

CONTRACTOR CNI22
Mr. Li Tao (Project Manager) .
Mr. Wu Yong Jun (Chief Engineer).Not attending
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).
Mr. Zhou Zhong Qi (Dili Substation Engineer) . Not attending
Mr. Peng Liwei (Interpreter). Not attending
Mr. Liu Jie (Electrical Engineer). Not attending
Mr. Li Chao (Electrical Engineer).
Mr. Jiang Pei Yun (Transmission Lines Dep. Manager).Not attending
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).
Mrs. Dina (Interpreter).

Subject of the meeting : Coordination of the works

Agenda of the present meeting :

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

The Consultant addressing to all the present , before starting the meeting , stated that any time a letter with precise instruction is issued and the Contractor does not follow it , that is considered as a very impolite gesture , if there is any objection to the contents of the letter that should be discussed , but ignoring the instruction given cannot be accepted . Reference is clearly for the issue of the stringing operation and for the concrete CAPS on the anchor bolts done without approval .

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

No comments from 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

The overall situation in these two weeks is slowing down considerably, the daily production has had a set back quite remarkable.

From Liquica substation up to Lospalos substation including Baucau - Viqueque section there are 454 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	Stringing conductors	Total number
Hera-Dili	30	30	30	27	30
Hera- Manat.	82	81	76	–	92
Manatuto-Baucau	123	117	115	–	131
Dili-Liquica	72	70	46	–	87
Baucau-Lospalos	15	8	–	–	118
Baucau- Viqueque	14	2	–	–	96
TOTAL	336	308	267	27	554
THIS Period of 16 days	**12**	**10**	**18**		

From January 31 , 2011 up to February 17, 2011 (16 days) , in this period for 3 days the Contractor close all activity for the Lunar New Year Celebration , but in any case the production remain very low and very worrying : 1 excavation per day , 0,8 concrete foundation per day , 1.4 tower erected per day with a number of seven (7) teams.

The Contractor stated that the low production is due to the heavy rain which disrupted the access roads along the line and consequently the transportation of the material was impossible.

The Consultant objected the fact that in the weekly report all these events are not mentioned, therefore the new may not be considered totally true .

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

Erection of towers are completed , joint inspection of towers N1-N2 and N30 to be done.. The Consultant is suggesting to do the stringing of the conductors from tower N29 to N30 and up to the gantry in Dili substation at once in order to avoid problems with land owner in tower N30.

The jumpers in all angle towers will be installed starting from next week.

The Contractor is reminded to demolish as soon as possible all the Concrete Caps of the anchor bolts done without approval on towers N5-N6-N8-N22-N23

DILI – LIQUICA (36.80 KM – 87 towers)

Not too much progress in done in this line , the excavation work is completed in 72 towers foundations (about 82% of the total) and is in progress in 7 foundations.

The concrete has been done in 70 towers foundations (about 81% of the total)

Tower erected 46 (about 53% of the total).

For the works to be done on tower 2-4-5 the land owner agreed to let the Contractor to do the work ; on tower N. 3 the excavation is completed , for towers N4-N5 access road is necessary to be done and excavation will start soon after that.

The position of Tower N77, which is an angle tower, should be checked for a possible shifting of 15-20 meters away from the river bank.

HERA - MANATUTO

The terminal tower near Manatuto substation has been defined excavation work is completed in 82 tower foundations (about 89% of the total) and is in progress in 4 foundations .

The concrete has been done in 81 tower foundations (about 88% of the total)

Towers erected are 76 (about 82% of the total)

The stringing of the conductors done between tower N8 and N18 is rejected for the many damages caused to the conductors , the Contractor must explain what he intend to do . The Contractor is reminded to demolish as soon as possible all the Concrete Caps of the anchor bolts done without approval on towers N5-N8.

MANATUTO – BAUCAU (50.065 Km -131 towers)

The excavation work is completed in 123 tower foundations (about 93% of the total) and is in progress in 4. The Contractor stated that the low production is due to the swampy soil (towers 45,46,47,48 ,81,90,91) the water table is too high and excavation cannot be drained.

The concrete has been done in 117 tower foundations (about 89% of the total) .

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

The position of the terminal towers near the substations have been fixed , but the foundation drawings are not yet submitted.

The Contractor is reminded to demolish as soon as possible all the Concrete Caps of the anchor bolts done without approval on tower N13

BAUCAU – LOS PALOS (53.280 KM – 118 towers)

The excavation work is completed in 15 tower foundations (about 12 % of the total) and is in progress in 9 . The concrete has been done in 8 tower foundations (about 6.7 % of the total) Contractor stated that from next week more compressors will be sent on site and the production will increase , a new camp for the Chinese workers has been set up near towers N62-N63. And material will be stocked there .

On tower N35 the Contractor reported that the land owner is making problem and is obstructing the access road.

BAUCAU – VIQUEQUE (64 KM – 96 towers)

The excavation works is done in 14 tower foundations (about 14 % of the total) and is progressing on 10 foundations. The concrete has been done in 2 tower foundations. Contractor stated that on tower foundations 31-32-33-34 the Chief Suco requested to let local workers do the job to avoid fights among them .

The Consultant requested to have the section between tower 67 and 88 to be carefully examined because some soil sliding has been reported , geological the area seems to be instable .

LIQUICA - MALIANA (63 KM – 112 towers)

The Contractor stated that the Indonesian Company THEATE has started to send equipment on site and workers , the main base will be done in Maliana . The foundation cross section is done from tower N1 up to tower N73 and will be completed in the coming week , the remaining 7 KM of plan and profile will be submitted by end of the month.

MALIANA – SUAI

The Contractor stated that the remaining field survey work of about 27 Km ,which was not be done due to the heavy rain will be now completed (now) during the month of March .

SUAI- CASSA

The geotechnical investigation is on going .

CASSA- BETANO

Field survey of 25 Km remains to be done and SEPDI will send two surveyor teams at end of February to complete this portion .

BETANO - VIQUEQUE

The Contractor stated that survey of the cross section in each tower location is in progress in the last part between the river and Viqueque . The Contractor is now building three camps between Betano and the main river for the Chinese workers.

VIQUEQUE — LOSPALOS

Survey of the cross section in each tower location is completed from tower N1 up to tower N117.

The Contractor stated that works on this section will start in March 2011.

Substations

DILI SUBSTATION
The Consultant continue to remind the Contractor to improve the quality of finishing works .

- In the main control building the plastering of internal brick walls is proceeding in the first floor, 30% is the progress done
- In the 20Kv building the grounding copper cable installation is in progress , but the quality of the thermo-weld is not done correctly The installation of the steel channels supporting the switch gear must be in accordance to the factory requirement within a tolerance of 1mm per meter length.
- In the 150KV area the erection of the steel columns is in progress (slowly) and about 20% can be considered completed , but a lot of scratches to the galvanization is remarked by the Consultant .

MANATUTO SUBSTATION

In the main control building and in the 20KV building the work on the reinforced concrete structure in elevation above ground level is proceeding , but extremely slowly. The statement made previously by the Contractor that the two building will be totally completed during the month of February , in the present situation , can not be expected to happen.
The supporting small foundations in the 150KV area are all completed.
The steel structures for the 150 KV area will be arriving during the month of March.

BAUCAU SUBSTATION
The site levelling and embankment is in progress and will be completed in the current week. For the execution of the civil works three local contractor have submitted their quotations which are now under evaluation by CNI22.

LOS PALOS SUBSTATION
The site levelling and embankment is still in progress and is done by a local contractor .
The work on the fencing wall has started with the foundation and is done also by local contractor.

LIQUICA SUBSTATION
The installation of temporary facilities has been completed .The foundations work will start toward end of February.
Drilling of the water well was stuck at the depth of 95 meter by the broken bit and consequently had to be relocated and drilling started all over again.

MALIANA SUBSTATION
Site levelling and embankment will start toward end of February by a local contractor.

SUAI SUBSTATION
Compensation to the land owners is in process and soon after site levelling work will start most probably in March.

CASSA SUBSTATION
The Contractor is still insisting to shift the site , there is no objection , but he should arrange the issue on its own with the local community.

VIQUEQUE SUBSTATION
The site levelling and embankment has been completed by a local contractor that will do also the fencing wall .
Contractor stated that civil work will be done directly by CNI22 and will be completed in nine months during the period March — November 2011..

Hera Power Plant
The activity of the Oil Tanks construction is in progress .proceeding .
The steel plate of the bases have been placed and completed in all 8 tanks.
The construction of the domes (roof) is done in the 3 tanks of 5000 M3 and in 2 tank of 1000 M3 .
The steel structures to lift the dome and start installation of the steel plate (walls) has been installed in one of 5000M3 tank.
The progress of Tanks construction is in accordance to the time schedule submitted.

Betano Power Plant
No activity

3) Delivery of Material and Equipment

The Contractor is reminded that the < massacre > done with the cable drums has no justification at all , regardless the material in covered or not by Insurance .
The quantity of cable drums so heavily damaged during handling and transportation give to anyone the clear idea that the Contractor does not care and surely it affect its reputation.

4) Drawings and technical specifications

The most urgently drawings needed now are those related to the electrical part od Dili substation : Cable lay out , type and size of cables , position of conduits and dimensions.

5) Insurance

Situation is unchanged . The contractor stated that all the material damaged is covered by insurance , the Consultant requested to have copy of the policy

6) Payments

The only payment pending is the one related to the interim payment certificates No.10 for the month of December 2010 .

7) Environment

Situation unchanged , similar as previously described in the minutes of meetings. The Contractor is invited to pay special attention on this issue.

8) Question

No major question raised .

The present meeting started at 15:15 and ended at 19:00

Next meeting is scheduled for Monday 28 February , 2011 at 14:30 in Hera.

Contract RDTL - 812931

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

MINUTE of MEETING

Location : HERA – CNI22 Office
Date : February 28 , 2011

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

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

CONTRACTOR CNI22
Mr. Li Tao (Project Manager) .
Mr. Wu Yong Jun (Chief Engineer).Not attending
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).
Mr. Zhou Zhong Qi (Dili Substation Engineer) . Not attending
Mr. Peng Liwei (Interpreter). Not attending
Mr. Liu Jie (Electrical Engineer).
Mr. Li Chao (Electrical Engineer). Not attending
Mr. Jiang Pei Yun (Transmission Lines Dep. Manager). Not attending
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). Not attending
Mr. Zhu Ling (Designer). Not attending
Mr. Li Yui (Designer .Not attending
Mr. Cai Hui (QHSE).
Mrs. Dina (Interpreter).

Subject of the meeting : Coordination of the works

Agenda of the present meeting :

1) Comments on the last minute of meeting dated February 17, 2011.
2) Progress of works.
3) Delivery status of materials and equipment.
4) Drawings and technical specifications.
5) Insurance policy
6) Payment
7) Environment
8) Question

The Consultant , before starting the meeting , requested , once again , the Contractor to write down in the weekly report exact information reflecting the real work executed , for example tower N 6 of Dili-Liquica has been given as totally erected (see weekly report No.04) while only the main body has been erected . The Contractor stated that the tower is not completed because the structure of the top part has been stolen by local people The Consultant does not believe such statement in any case the tower should not have been included in the list of the <completed works>. The Consultant asked if the Contractor has received any instruction from SEPDI concerning the anchor bolts tightening , no instruction is received up to date.

1) Comments on the last minute of meeting dated February 17, 2011

No comments from Contractor

No comments from EDTL.

Mr Veton raised the question that in the weekly report No. 05 it is written that the fire alarm system drawings were submitted while in the reality were not , the Contractor stated that drawing submitted he meant the Chinese version received from SEPDI and the English version would be submitted during this period .

Another question raised is concerning the Material Procurement List where it is written < Just purchased > while the relevant drawings have not been approved yet by the Consultant , the Contractor said that for Material Purchased it means agreement made with the supplier .

No other 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

From Liquica substation up to Lospalos substation including Baucau - Viqueque section there are 454 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	Stringing conductors	Total number
Hera-Dili	30	30	30	27	30
Hera- Manat.	82	81	79	–	92
Manatuto-Baucau	123	117	115	–	131
Dili-Liquica	73	70	49	–	87
Baucau-Lospalos	36	16	–	–	118
Baucau- Viqueque	22	11	–	–	96
TOTAL	366	325	273	27	554
THIS Period of 11 days	**30**	**17**	6	--	

From February 17 , 2011 up to February 28, 2011 (11 days) , the production remain very low : 2.7 excavation per day , 1.5 concrete foundation per day , 0.5 tower erected per day . The Contractor stated that several foundations in Hera - Manatuto section are located in swampy area and could not be done in this period must wait until the soil to get dry and can be accessible . The quantity of tower erected is very low , The Contractor stated that all the 7 teams are now doing tightening of the bolts and fixing the missing pieces as well as fabricating missing pieces from row galvanized steel . The Consultant requested that the newly fabricated pieces in the workshop has to be marked for easily identification and for checking In any case the construction of the foundations have to be accelerated otherwise the 7 teams of erectors may complete the few remaining towers and then be idle .

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

Stringing of the conductors on towers 1-2-3 and 29-30 up to the gantry of Dili substation will be done during the month of March .
Installation of the grounding on tower 1 and 2 shall be done during the coming week.
The Contractor is reminded to start doing the levelling and final adjustment of the soil around the foundations .

DILI – LIQUICA (36.80 KM – 87 towers)

The work is concentrate on the foundations 1-2-3-4-5 .
Excavation of foundations land 3 are completed , for foundation No. 4 the problem of the access road is being solved , on foundation No. 5 all the obstacles have been solved . The foundation No. 1 may need to be relocated due to the vicinity of the house , the Contractor will submit the plan with the final solution .
The excavation work is completed in 73 towers foundations (about 95% of the total) . The concrete had no progress remain done in 70 towers foundations (about 81% of the total)
Tower erected 49 (about 56% of the total.
For the position of tower N77 no relocation is envisaged , but a protective wall is required.

HERA - MANATUTO (45 Km -92 towers)

The excavation work remains unchanged, completed in 82 tower foundations (about 89% of the total)
The concrete remains unchanged , has been done in 81 tower foundations (about 88% of the total)
Towers erected are 79 (about 86% of the total)
The stringing of the conductors done between tower N8 and N18 is rejected for the many damages caused to the conductors and must be totally replaced with new ones. The Contractor is advised that stringing of conductors in new sections is not allowed unless the section N8-N18 is fully repaired and accepted.

MANATUTO – BAUCAU (50.065 Km -131 towers)

No progress has been done .The excavation works completed remain in 123 tower foundations (about 93% of the total) .
The concrete remain done in 117 tower foundations (about 89% of the total) . Towers erected remain 115 (about 87% of the total).

BAUCAU – LOS PALOS (53.280 KM – 118 towers)

The excavation work is completed in 36 tower foundations (about 30.5 % of the total) and is in progress in 33 The concrete has been done in 16 tower foundations (about 13.5 % of the total.
The Contractor stated that the problem of access roads on towers N34 and N35 is being solved with the land owner .

BAUCAU – VIQUEQUE (64 KM – 96 towers)

The excavation works is done in 22 tower foundations (about 23 % of the total) and is progressing on 22 foundations. The concrete has been done in 11 tower foundations (about 11.4% of the total).
Contractor stated that on tower foundations 31 32 33 34 35 36 37 38 39 there are problems with land owners . Chief Suco and Veterans have to be involved to overcome the problems.
The Consultant requested to have the section between tower 67 and 88 to be carefully examined because some soil sliding has been reported , geological the area seems to be instable .

LIQUICA – MALIANA (63 KM – 112 towers)

The Contractor stated that the Indonesian Company THEATE has completed the cross section survey . on March 03 technicians will be mobilized , equipment is on the way from Jakarta or Singapore to Cupan and from there by trucks directly to Maliana

MALIANA – SUAI

The Contractor stated that the remaining field survey work of about 27 Km ,which was not be done due to the heavy rain will be now completed (now) during the month of March .

SUAI- CASSA

The geotechnical investigation is still on going , could not be completed due to heavy rain .

CASSA- BETANO

Field survey of 25 Km remains to be done and SEPDI will send two surveyor teams are expected to arrive on March 03 to complete this section .

BETANO - VIQUEQUE

The Contractor stated that survey of the cross section in each tower location is almost completed .
The installation of the three camps will be completed in a week time and each can accommodate 20 Chinese workers .

VIQUEQUE – LOSPALOS

Survey of the cross section in each tower location is completed from tower N1 up to tower N117.
The Contractor stated that is organizing a visit to the various local Chefe Sucos with EDTL before starting the excavation works in order to have full collaboration from the local communities

Substations

DILI SUBSTATION

The works are proceeding, but at a slow rate, and also the quality of the finishing is not good, inside the buildings workers are doing installation of conduit, of grounding network without drawings, only by sense.

- In the main control building preparation work for the concrete floor is in progress.
- In the 20Kv building the preparation for the concrete floor is also

- In the 150KV area the erection of the steel structures is 70% completed and it will be completed by mid of March..

MANATUTO SUBSTATION

In the main control building the concreting of the roof is planned for today .In the 20KV building the work on the reinforced concrete columns above ground level is in progress , but very slowly.
On Friday 25 February the Consultant Electrical Engineers made an inspection on site at 10:45 and found not a single worker on duty. The Contractor stated that is not worried of the progress in Manatuto substation because the work will be completed on time .

BAUCAU SUBSTATION

The site levelling and embankment will be completed in the current week..
For the execution of the civil works out of three local contractor invited only one has submitted a complete quotation and will sign the contract in the coming week.

LOS PALOS SUBSTATION

The site levelling and embankment is almost completed done by a local contractor The work on the fencing wall has started with the foundation excavation . The civil work will start during the month of March by a local contractor.

LIQUICA SUBSTATION

The foundations work for the main transformer is in progress. Excavation of foundation for the 150 KV structures started. Drilling of the new water well is in progress.

MALIANA SUBSTATION

Site levelling and embankment was supposed to start toward end of February by a local contractor, but he did not show up (may be , due to the broken bridge , the equipment can not be mobilized. CNI22 shall look for other solution.

SUAI SUBSTATION

No activity.

CASSA SUBSTATION

The Contractor is negotiating with the local community the new area to be occupied by shifting the site of 50 meters . Tomorrow the contractor will be on site to finalize the matter.

VIQUEQUE SUBSTATION

The site levelling and embankment has been completed , final level to be checked .
The drawings for the civil work will be submitted in the coming week . Construction of temporary facilities for CNI22 staff will start in the coming week.

Hera Power Plant

The construction of the Oil Tanks is proceeding .
The Roof (Dome) is now done in all 8 tanks.
The construction of the walls is in progress in two 5000 M3 tanks and the height reached is 5 meters.

Betano Power Plant

No activity

3) Delivery of Material and Equipment

The delivery schedule attached to the weekly report should be verified and to be more realistic , a lot of equipments for the substations are indicated as <manufacture in progress > and <ready for shipment in early April > this is not possible because after manufacture the equipment must be tested . For example in accordance to the official test schedule given by Tianhong Manufacturer the transformers for Baucau — Liquica — Viqueque will be tested starting from May 09 2011 , and the transformers for Maliana — Suai — Cassa will be tested starting from June 15 , 2011. Therefore shipment cannot be expected in <early April >as stated.

4) Drawings and technical specifications

CNI22 is requested to make more pressure on Sichuan Electrical Power Design Institute to finalize , at this stage of the project , all the drawings in particular those drawings related to the electrical parts , instrumentation , protection etc.

5) Insurance

Situation is unchanged . The contractor stated that all the material damaged is covered by insurance , the Consultant requested to have copy of the policy

6) Payments

The payment pending is related to the interim payment certificates No.10 for the month of December 2010 and No.11 for the month of January 2011.

7) Environment & Safety

The Contractor is invited to pay special attention on this issue. and to follow strictly the instructions given either verbally or written by the Consultant Safety Engineer and Environmental Specialist .

9) Question

No major question raised

The present meeting started at 15:15 and ended at 19:00 .

Next meeting is scheduled for Wednesday 16 March , 2011 at 14:30 in Hera.

Title:	Co-ordination Meeting	**Doc. ID:**	DBAB582447
		Revision:	-.4
Recorded by:	Matias Vartio / Syed Abdullah	**Status:**	Draft
Draft by:		**Pages:**	1 (3)
Project:	HERA Power Plant		
Description:	Site 02		
Type:	Minutes of Meeting		

Co-ordination Meeting

1. General information

Meeting no:	2nd Co-ordination meeting
Date:	16th February 2011
Project:	Hera Power Plant
Venue:	EDTL, Dili office
Participants:	As per enclosed attendance list
	The meeting was introduced to Mr. Virgilio Fatima Guterres as the Director General of EDTL

MINUTES OF MEETING

2. AGENDA

The meeting was opened by Mr. Felice Maffei, ELC & Bonifica, Project Manager acting as EDTL Engineer with the following agenda;

- Reviewed the last minute of meeting
- Update of the Factory Acceptance Test (FAT) schedule
- Delivery and update of manufacturing status
- Update of Site Progress
- Transportation plan
- Other matter
- Technical matter
  - Civil
  - Mechanical
  - Electrical

3. PREVIOUS MINUTES OF MEETING

The previous minutes of meeting was reviewed and mutually approved but not yet distributed

4. FACTORY ACCEPTANCE TEST (FAT)

The meeting was informed will the following information;

- New Dates for Engine FAT test in Italy are 21-25.3.2011
- After this Generators will be tested in Finland
- Syed will inform the Visa application procedure to PAE/EDTL separately
- PAE have received the participants names, 4 from EDTL and 5 from the Parliament
- The FAT procedure was presented during the meeting and will be enclosed with the minutes of meeting

5. DELIVERY, PRECUREMENT & MANUFACTURING STATUS

- List of ordered equipment was presented
- Major part of the Mechanical Auxiliaries will be already in the first shipment. (ETA Hera early June, 2011)

6. UPDATE OF SITE PROGRESS

- PAE, Wartsila, Wika Site Office will be ready 19.2.2011,
- EDTL office ready early March
- Batching plant ready 7.3.2011

7. TRANSPORTATION PLAN

- Transportation arrangements will be investigated the coming week
- Naval base ramp is preferred for the first shipment, in order to avoid risky road transportation.
- Shipping mark proposal will be sent to ELC & Bonifica for approval
- Paper and custom clearance formalities are done at designation port that is Dili port.
- Beach landing arrangements will start soon. Better to have it ready as soon as possible so that any problem encounter can be overcome immediately
- EDTL is willing to support in practical arrangements with Naval Port deals.

8. OTHER MATTER

The meeting was informed with the following information;

- CMA Site Engineer Mr. Kari Ruuth will arrive on 17.2.2011
- DHL delivery Jakarta – Dili takes 10 days
- HSE Plan received and accepted

9. TECHNICAL MATTER

Civil

- Critical civil drawings received, so site work can start
- Critical material amounts know and reinforcement and piling material can be ordered
- Test mixes ready 18.2.2011
- All Civil material in one shipment (except non-critical items)
- Piling location drawing ready end of week 7
- Civil design proceeding as per plan

Mechanical

- Basic design binders currently in Jakarta, electrical format available
- Detailed design should be ready early April.
- Main procurement can be ordered earlier, but piping, pipe supports and ducting can only be ordered after detailed design is ready.

Electrical

- LV 380V/220V
- Electrical Basic design available
- Soil electrical resistivity test report received from ELC & Bonificia
- Lighting arrestor and earthing drawing received from ELC & Bonificia (drawing No. SS-E-F1521S-D08020-(01-04)

10. NEXT SCHEDULED MEETING

Next meeting is scheduled to be held on;

Date: 2.3.2011
Time: 14:30 hrs until finish
Venue: Dili EDTL office

The above date is agreed otherwise been re-scheduled.

The meeting ended at 16:10 hrs

--ooO END Ooo--

Attachment:

FACTORY ACCEPTANCE TEST FOR WÄRTSILÄ 46 POWER PLANT ENGINES (4V99F0208f)

ELECTROCONSULT & BONIFICA S.p.A. JOINT VENTURE

CONSTRUCTION SUPERVISION SERVICES FOR THE BUILDING OF NATIONAL ELECTRICAL POWER SYSTEM FOR TIMOR LESTE

Electrical Power System For the Timor - Leste Contracr RDTL - 812931

PROJECT SCHEDULE & S-CURVE

	Description	Contract Amount US ($)	Weight (%)	2009			2010												2011												2012			%
				10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	**Power Plants Cancelled**																																	100%
2	**Substation**																																	
2.1	Dili Substation	10,184,861	3.69	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31																			96%
2.2	Manatuto	7,056,051	2.56			0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.26	0.26																			92%
2.3	Baucau	6,885,782	2.49						0.36	0.36	0.36	0.36	0.36	0.35	0.34																			88%
2.4	Lospalos	6,261,772	2.27													0.33	0.33	0.33	0.32	0.32	0.32	0.32												84%
2.5	Liquica	6,296,962	2.28							0.33	0.33	0.33	0.33	0.32	0.32	0.32																		80%
2.6	Same	5,932,731	2.15												0.31	0.31	0.31	0.31	0.31	0.30	0.30													76%
2.7	Suai	6,193,048	2.24																	0.32	0.32	0.32	0.32	0.32	0.32	0.32								72%
2.8	Maliana	5,939,081	2.15																						0.31	0.31	0.31	0.31	0.31	0.30	0.30			68%
2.9	Viqueque	6,424,344	2.33																			0.33	0.33	0.33	0.33	0.33	0.34	0.34						64%
3	**Transmission Line**																																	60%
3.1	Dili - Liquica	10,044,269	3.64								0.61	0.61	0.61	0.61	0.60	0.60																		56%
3.2	Manatuto - Baucau	20,849,423	7.55								0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95																52%
3.3	Baucau - Lospalos	24,070,851	8.72											0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.96												48%
3.4	Baucau - Viqueque	17,215,137	6.24															0.62	0.62	0.62	0.62	0.62	0.62	0.63	0.63	0.63	0.63							44%
3.5	Los Palos - Viqueque	23,307,181	8.44																			0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.76	0.76	0.76		40%
3.6	Viqueque - Betano	25,264,459	9.15														0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91								36%
3.7	Betano - Same	6,620,699	2.40											0.48	0.48	0.48	0.48	0.48																32%
3.8	Same - Suai	20,954,082	7.59																		0.84	0.84	0.84	0.84	0.84	0.84	0.85	0.85	0.85					28%
3.9	Suai - Maliana	15,370,695	5.57																					0.79	0.79	0.79	0.80	0.80	0.80	0.80				24%
3.1o	Maliana - Liquica	16,420,763	5.95																								0.85	0.85	0.85	0.85	0.85	0.85	0.85	20%
3.11	Dili - Hera	7,806,450	2.83	0.31	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.32																						16%
3.12	Hera - Manatuto	16,092,095	5.83					0.83	0.83	0.83	0.83	0.83	0.84	0.84																				12%
3.13	As built document	1,000,000	0.36																										0.07	0.07	0.07	0.07	0.08	8%
3.14	20kV Distribution Line	9,902,111	3.59																	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.29			4%
	Total Amount	**276,092,847**	**100**																															0%

Legend :																																	
SCHEDULE	Month Schedule		0.62	0.62	0.87	0.87	1.70	2.07	2.41	3.96	3.96	3.65	5.08	4.53	3.96	3.96	4.58	3.14	3.75	4.59	5.37	4.09	4.89	5.20	5.20	4.85	4.22	3.95	3.08	2.27	1.68	0.93	
ACTUAL	Cummulative		0.62	1.24	2.1	2.97	4.67	6.74	9.14	13.10	17.06	20.71	25.78	30.31	34.27	38.23	42.81	45.95	49.70	54.29	59.66	63.75	68.64	73.84	79.04	83.89	88.11	92.06	95.14	97.41	99.09	100.00	
	Actual (%)		0.00	0.00	0.00	0.00	2.13	0.00	1.49	1.25	0.29	1.77	2.02	4.92	3.79	3.82	3.42	3.16	1.16														
	Cummulative (%)		0.00	0.00	0.00	0.00	2.13	2.13	3.62	4.87	5.16	6.93	8.95	13.87	17.66	21.48	24.90	28.06	29.22														
	Slippage		(0.62)	(1.24)	(2.10)	(2.97)	(2.54)	(4.61)	(5.52)	(8.23)	(11.90)	(13.78)	(16.83)	(16.44)	(16.61)	(16.75)	(17.91)	(17.89)	(20.48)														

(pages 40-43 in original report)

FINANCIAL PROJECT STATEMENT

1) Contract with CNI22

A.) Contract signed on 25 October 2008. The total contract value of US $ 360,366,947.00.

B.) Amendment No. 1 signed on 27 February 2009. Total contract value unchanged of $360,366,947.00 split in:

(I) US $ 91,038,377.00 for Power Plant, and its Facilities.

(II) US $ 269,328,570.00 (Equivalent to Foreign Currency RNB 1,885,300,000.00) for Power Grid and it's Facilities.

In addition to the above

(III) US $ 3,000,000.00 per year per a period of 5 years, and operation of the whole Power Plant, and Power Grid and Training of owner's nominated personnel.

C.) Amendment No. 2 signed on 21 December 2009. The contract value has been increased of US $ 6,764,277.00 due to the adjustment of the exchange rate between US $ and Chinese currency RNB Renminbi.

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

(I) US $ 91,038,377.00 for Power Plant, and it's Facilities (unchanged)

(II) US $ 276,092,847.00 for Power Grid and it's Facilities,

(III) US $ 3,000,000.00 per year per 5 year period for management and operation of the whole Power Plant, and Power Grid and Training of owner's nominated personnel.

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

D.) Amendment No3. Is now under preparation and is reflecting the cancellation of the two power plants.

The total new Contract Value is reduced 0f US $ 91,038,377.00 and is equal to **US $ 276,092,847.00**

A. Disbursement Schedule:

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

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

90% of the new contract price US $ 248,483,562.30
To be paid the Contractor in monthly installment, in accordance to the progress of the works and as per the price schedule items.

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

Interim payment No.	Gross amount US$	Net Amount US$
1	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	13,593,524.10	10,877,498.39 paid
8	10,454,635.75	8,374,646.12 paid
9	10,552,883.93	8,463,473.67 paid
10	9,449,125.16	7,572,389.75 in Process
11	8,723,373.58	6,993,451.33 in Process
12	3,221,828.39	2,577,562.86 in Process
Total	**80,686,507.25**	**64,621,658.12**

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

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. Payment done

US $ 40,000,000.00(portion of the advance payment) paid on 30-12-2010 against a Bank Guarantee.

B. Expected Budget of Performance

1. WORKS & SUPPLY

Year	Monthly Schedule of Disbursement (USD)					Amount
2009		**Jan-Mar**	**Apr.-Jun**	**Jul-Sep**	**Oct-Dec**	
			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
	TOTAL					**628,661,970.00**

2. MANAGEMENT & OPERATIC(Indicative only)

Year	Monthly Schedule of Disbursement (USD)					Amount
2012		**Jan-Mar**	**Apr.-Jun**	**Jul-Sep**	**Oct-Dec**	
			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
	TOTAL					**15,000,000.00**

NOTE:

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

(pages 57-65 of original report)

a) Summary of Contracts Contractual Data

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

SCOPE OF WORKS:

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

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

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

(i) The existing Comoro and Hera and Betano Power Plants will be connected through the Power Grid.

(ii) Around 715 Km length of the National Power Grid shall consist of 58 Km double circuits, 657 Km single circuit 150 KV transmission lines and 9 substations located at Dili, Baucau, Liquica, Manatuto, Lospalos, Viqueque, Cassa, Suai and Maliana. The actual length of Transmission Lines measured from Gantry to Gantry of each substations shall have no effect to the Total Contract Price in case there will be variance in plus or minus compared to the distance measured in the maps.

(iii) 120 Km of 20 KV Distribution Lines to connect Aileu, Gleno, Same, and Ainaro from the nearest 150/20KV Substations, and connection of the Substation to the 20KV Power Grid. This total length of the Lines is fixed and additional kilometers of lines, if requested will be paid as an additional amount to the Contract prices in accordance to the unit rates indicated in the Contract Agreement;

(iv) The possible relocation of the Power Plant in Betano shall be technically negotiated with no effect the Contract Price.

CONTRACT PRICE:

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

(a) US$ 91,038,377.00 (Ninety One Million Thirty Eight Thousand Three Hundred Seventy Seven US Dollars) for the two (2) Power Plants and their Facilities;

(b) US$ 276,092,847.00 (Two Hundred Seventy Six Million Ninety Two Thousand Eight Hundred Forty Seven US Dollars) for Power Grid 150 / 20 KV and its Facilities.

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

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

Hera	120 MW
Betano from 60 MW to	130 MW

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

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

Power Grid (Transmission Lines and substations including 20KV distribution line)	**US $ 276, 092, 847.00**
Hera Power Plant	**US $ 164, 532, 257.00**
Betano Power Plant	**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 , the Tanks , the two switchyards (step-up transformer), and all administrative buildings.

These additional costs are now under evaluation and once approved will be included in the monthly report.

SUMMARY OF CONTRACT STATUS

I. HERA POWER PLANT

Puri Akraya Engineering Limited with the two subcontractors Wartsila Indonesia and Wika is doing the construction of the facilities : site office , storage area , Generators shed , carpentry shop , parking area , concrete batching plant , access road , entrance guard house .

In addition to the above the following documentation have been submitted to the Consultant :

- Copy of Insurance Policy covering Construction , Erection and Third Party Liability
- Drawings of permanent boundary fence
- Record Formats for inspection of site work
- Health , Safety and Environment Plan (HSE)
- Method of statement for Piling Work
- Concrete Mix Design
- Basic design for Civil work
- Basic design for Electrical work

Invitation letter has been issued to witness the Factory Acceptance Test (FAT) of the first three generators sets scheduled in mid March in Trieste - Italy and in Helsinky - Finland .

CNI22 on its side of Hera Power Plant is progressing with the construction the Oil Tanks

The roof (dome) of all 8 tanks is done and in two 5,000 M3 the roof has been lifted and construction of the walls reached 5 meters height .

II. BETANO POWER PLANT

So far there are no physical activities except the reconnaissance survey of the area and establishing logistic locations for convenient for the works.

III. SUBSTATIONS

DILI SUBSTATION

- The main activities are concentrated in the civil works which can be considered 80% done , finishing works are now the most important parts which require a lot of attention.
- Bricks fencing wall remains the same as previously situation , uncompleted for 120 meters.
- The 20KV building, the bricks walls are completely done including plastering; floor slab of the switch boards area is under preparation.
- The Main Control Building, all concrete has been done except the cable duct trench at ground floor , the brick wall construction at the second floor is in progress ; Sanitary and water supply pipes including the electrical supply conduit has been placed;
- The secondary cable trench located at the 150KV switch yard is 60% complete;
- The pump house , concrete structures are completed including the walls with plaster . Architectural finishing to be done with the mechanical installation.
- The 150 KV area the erection of the galvanized still columns is in progress .
- The concrete structure of the water reservoir for firefighting is completed , water proof plastering remain to be done.
- In the capacitor foundation area, cable trench is under construction .
- In the Guard house all the bricks walls are completed , plastering remains to be done.

MANATUTO SUBSTATION

- The fence brick wall remains completed on the three sides partially with plastering , progress only 60 %.
- The main foundations for the 150 KV area including the support foundations have been completed , cable trench is now under construction in this area.
- The 20 KV building , concrete structure above the ground is completed and preparation

work for the roof is in progress .

- The Main Control Building is under construction at roof level, ready to be concreted .
- The emergency oil pond for the main transformer is 100% complete;
- The emergency oil tank started and 50% complete.

LIQUICA SUBSTATION

- The Contractor continues the installation of the temporary facilities , and simultaneously started excavation of the main transformer foundation.
- 150 IN area No. 4 foundations of the supporting structures have been done . Water well drilling is in progress at a depth of 85 meters.

BAUCAU SUBSTATION

- The local subcontractor is doing site leveling , 85 % completed.

VIQUEQUE SUBSTATION

- Other than the site leveling, no other activities occurred this month.

LOSPALOS SUBSTATION

- The local subcontractor is doing site leveling , 90 % completed ; excavation for the fence wall started.

MANLIANA SUBSTATION

- No activity is reported

SUAI SUBSTATION

- No activity is reported , land owners still waiting for the compensation

CASSA SUBSTATION

- The Contractor is negotiating with the local community the compensation to be paid for shifting the site of 55 meters

IV. TRANSMISSION LINES

- HERA-DILI (9.89 KM) total number of double circuit towers: 30 units

Total number of tower foundations excavated:	30
Total number of tower foundations concreted:	30
Total number of tower erected:	29
Stringing of conductors- Number of towers:	27

- HERA-MANATUTO (40.83 KM) total number of double circuit towers: 91 units

Total number of tower foundations excavated:	82
Total number of tower foundations concreted:	81
Total number of tower erected:	79
Stringing of conductors-Number of Towers:	00

- MANATUTO-BAUCAU (51.87 KM) total number of single circuit towers: 132 units

Total number of tower foundations excavated:	123
Total number of tower foundations concreted:	117
Total number of tower erected:	115

- BAUCAU-LOSPALOS (53.28 KM) total number of single circuit towers: 118 units

Total number of tower foundations excavated:	36
Total number of tower foundations concreted:	16
Total number of tower erected :	00

- BAUCAU-VIQUEQUE (38.56 KM) total number of single circuit towers: 96 units

Total number of tower foundations excavated:	22
Total number of tower foundations concreted:	11
Total number of towers erected :	00

- DILI-LIQUICA (38.82 KM) total number of single circuit towers: 87 units

Total number of tower foundations excavated:	73
Total number of tower foundations concreted:	70
Total number of tower erected:	49

- LIQUICA-MALIANA (41.5 KM) total number of single circuit towers: 112 units

  The Indonesian contractor TEHATE is in the stage to mobilize equipment and personnel to start foundation works.

- MALIANA-SUAI

  No field activity is reported.

- SUAI-CASSA

  Geotechnical soil investigation is in progress .

- CASSA-BETANO

  No field activity is reported

- BETANO-VIQUEQUE

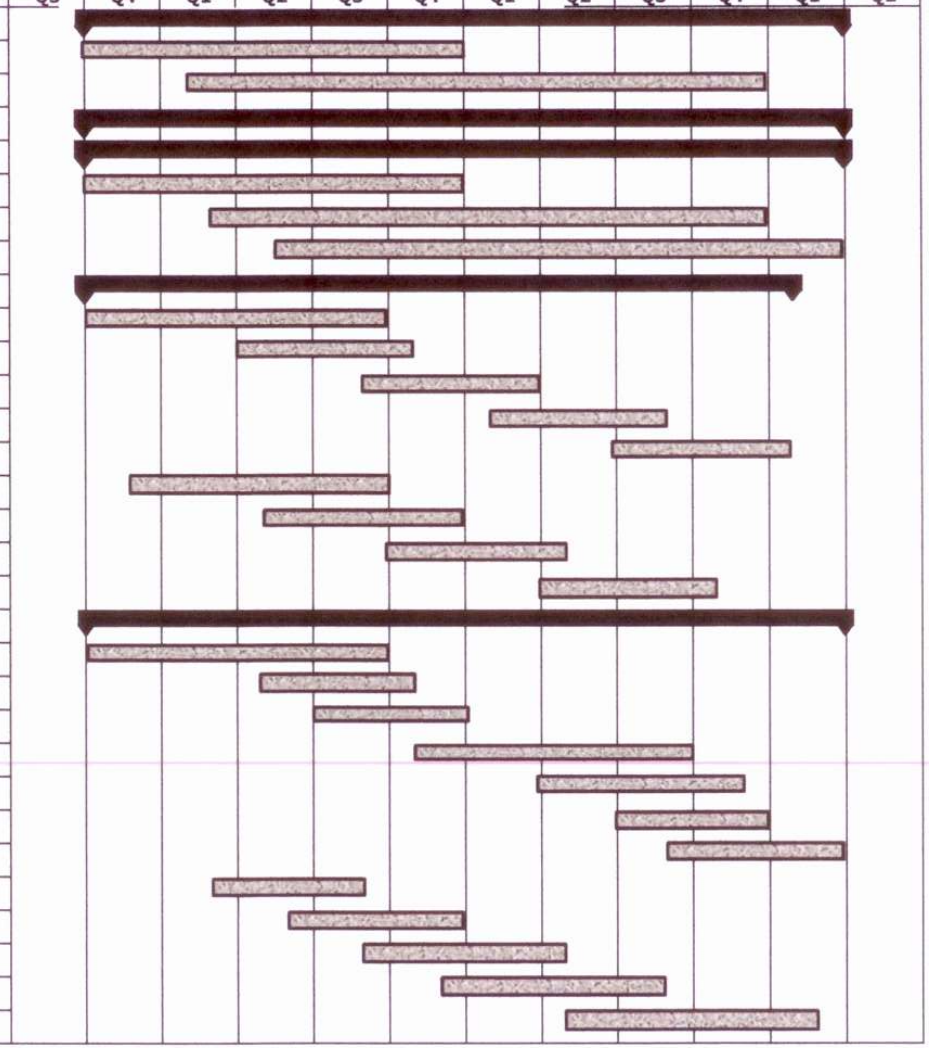
  The Contractor is installing three field camps to accommodate the workers

- VIQUEQUE-LOSPALOS

  The Contractor is coordinating collaboration from local communities and Chefe suco .

Progress Schedule of Timor - Leste Electrical Power Project

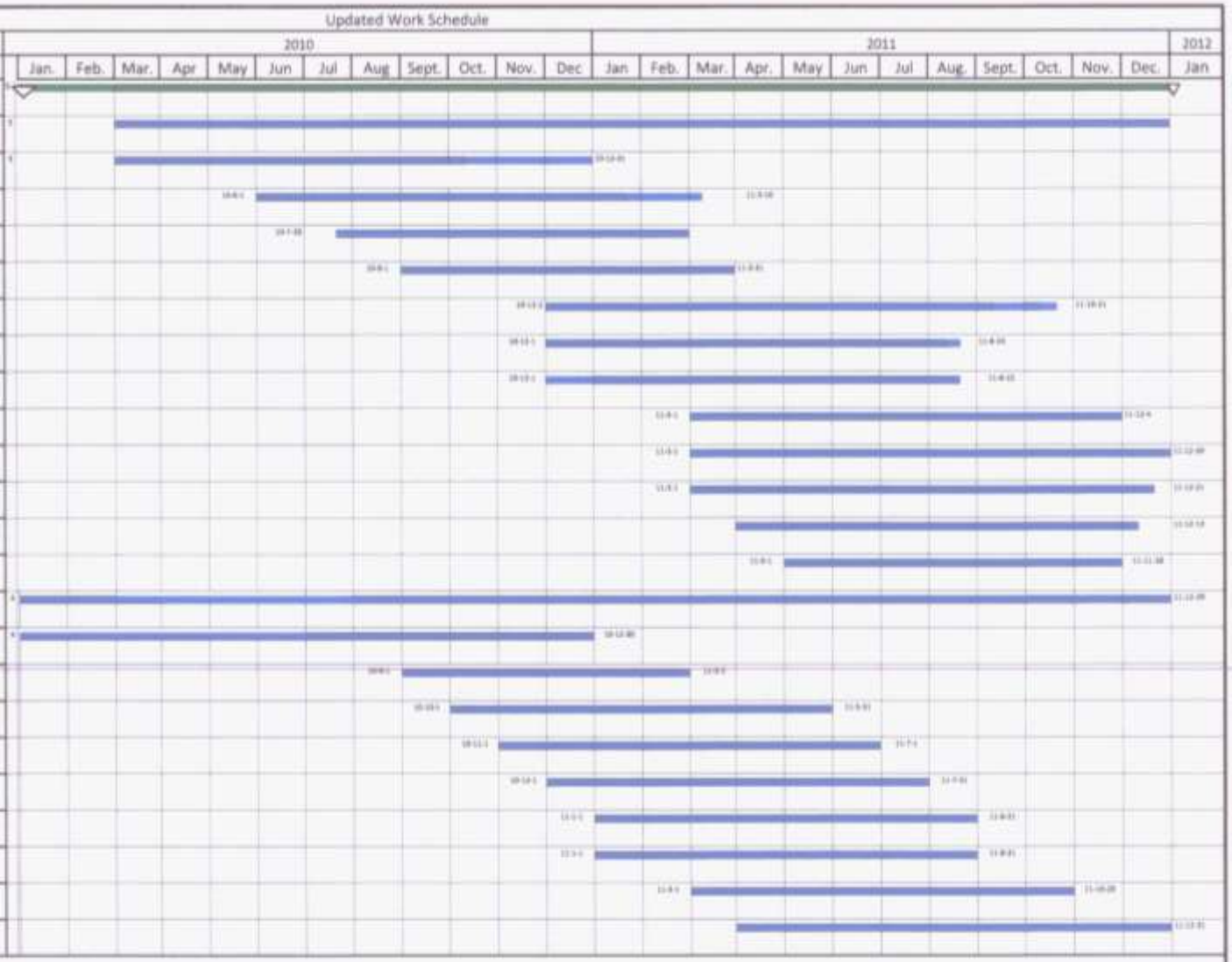
NO.	Activity	Duration	Commencement Date	Completion Date
0	Progress schedule of Timor - Leste Electrical Power Project	913d	2009-10-1	2012-03-31
1	Design	458d	2009-10-1	2010-12-31
2	Procurement & Delivery	716d	2009-01-15	2011-12-31
3	Construction	913d	2009-10-1	2012-3-31
4	**Power Plant Project**	913d	2009-10-1	2012-03-31
5	Hera Power Plant (Phase I)	547d	2009-10-1	2010-12-31
6	Hera Power Plant (Phase II)	396d	2010-3-1	2011-03-31
7	Betano Power Plant	670d	2010-06-1	2012-03-31
8	**Substation project**	854d	2009-10-1	2012-01-31
9	Dili Substation	365d	2009-10-1	2010-9-30
10	Liquica Substation	214d	2010-4-1	2010-10-31
11	Same Substation	212d	2010-9-1	2011-3-31
12	Suai Substation	212d	2011-2-1	2011-8-31
13	Maliana Substation	215d	2011-07-1	2012-1-31
14	Manatuto Substation	304d	2009-12-1	2010-9-30
15	Baucau Substation	214d	2010-6-1	2010-12-31
16	Lospalos Substation	212d	2010-11-1	2011-4-30
17	Viqueque Substation	214d	2011-4-1	2011-10-31
18	**Transmission Line Project**	913d	2009-10-1	2012-03-31
19	Dili - Hera Transmission Line	181d	2009-10-1	2010-6-30
20	Dili - Liquica Transmission Line	184d	2010-5-1	2010-30-1
21	Same - Betano Transmission Line	153d	2010-8-1	2010-12-31
22	Betano - Viqueque Transmission Line	304d	2010-11-1	2011-8-1
23	Same - Suai Transmission Line	275d	2011-3-1	2011-11-30
24	Suai - Maliana Transmission Line	214d	2011-6-1	2011-12-31
25	Maliana - Liquica Transmission Line	213d	2011-9-1	2012-3-31
26	Hera - Manatuto Transmission Line	212d	2010-2-1	2010-8-31
27	Manatuto - Baucau Transmission Line	245d	2010-5-1	2010-12-31
28	Baucau - Lospalos Transmission Line	273d	2010-8-1	2011-4-30
29	Baucau - Viqueque Transmission Line	274d	2010-12-1	2011-8-31
30	Viqueque - Los Palos Transmission Line	335d	2011-4-1	2012-2-29



CONTRACT TIME SCHEDULE REVISED AS PER CNI22 AMENDMENT No. 2

Updated Work Schedule

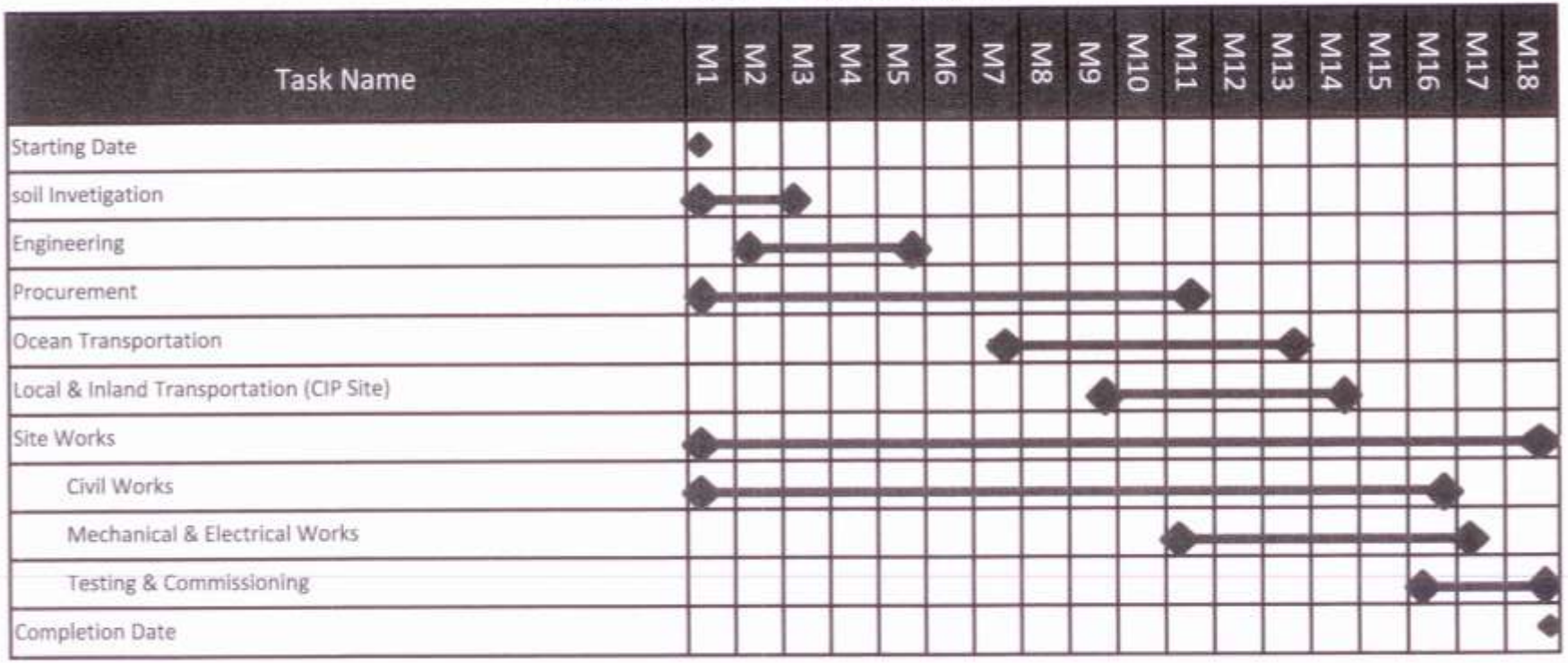
Activity	Duration	Commencement Date	Completion Date
Progress Schedule	667	10-3-5	11-12-31
Transmission Line	667	10-3-5	11-12-31
Dili-Hera (10 km)	215	10-3-5	10-12-31
Hera-Manatuto (40km)	229	10-6-1	11-3-10
Manatuto-Baucau (69 km)	265	10-7-20	11-2-28
Dili-Liquica (32 km)	222	10-9-1	11-3-31
Baucau-Lospalos (80 km)	249	10-12-2	11-10-21
Liquica-Maliana (63 km)	252	10-12-1	11-8-23
Baucau-Viqueque (64 km)	249	10-12-1	11-8-22
Maliana-Suai (58 km)	272	11-3-1	11-12-4
Viqueque-Betano (98 km)	304	11-3-1	11-12-30
Lospalos-Viqueque (80 km)	306	11-3-1	11-12-21
Suai-Cassa (69 km)	244	11-4-1	11-12-13
Betano- Cassa (36 km)	184	11-5-1	11-11-28
Substation Project	517	10-1-4	11-12-29
Dili Substation	183	10-1-4	10-12-30
Manatuto Substation	183	10-9-1	11-3-2
Lospalos Substation	243	10-10-1	11-5-31
Viqueque Substation	243	10-11-1	11-7-1
Baucau Substation	243	10-12-1	11-7-31
Liquica Substation	243	11-1-1	11-8-31
Suai Substation	243	11-1-1	11-8-31
Maliana Substation	243	11-3-1	11-10-29
Cassa substation	243	11-4-1	11-12-31



TRANSMISSION LINES AND SUBSTATIONS

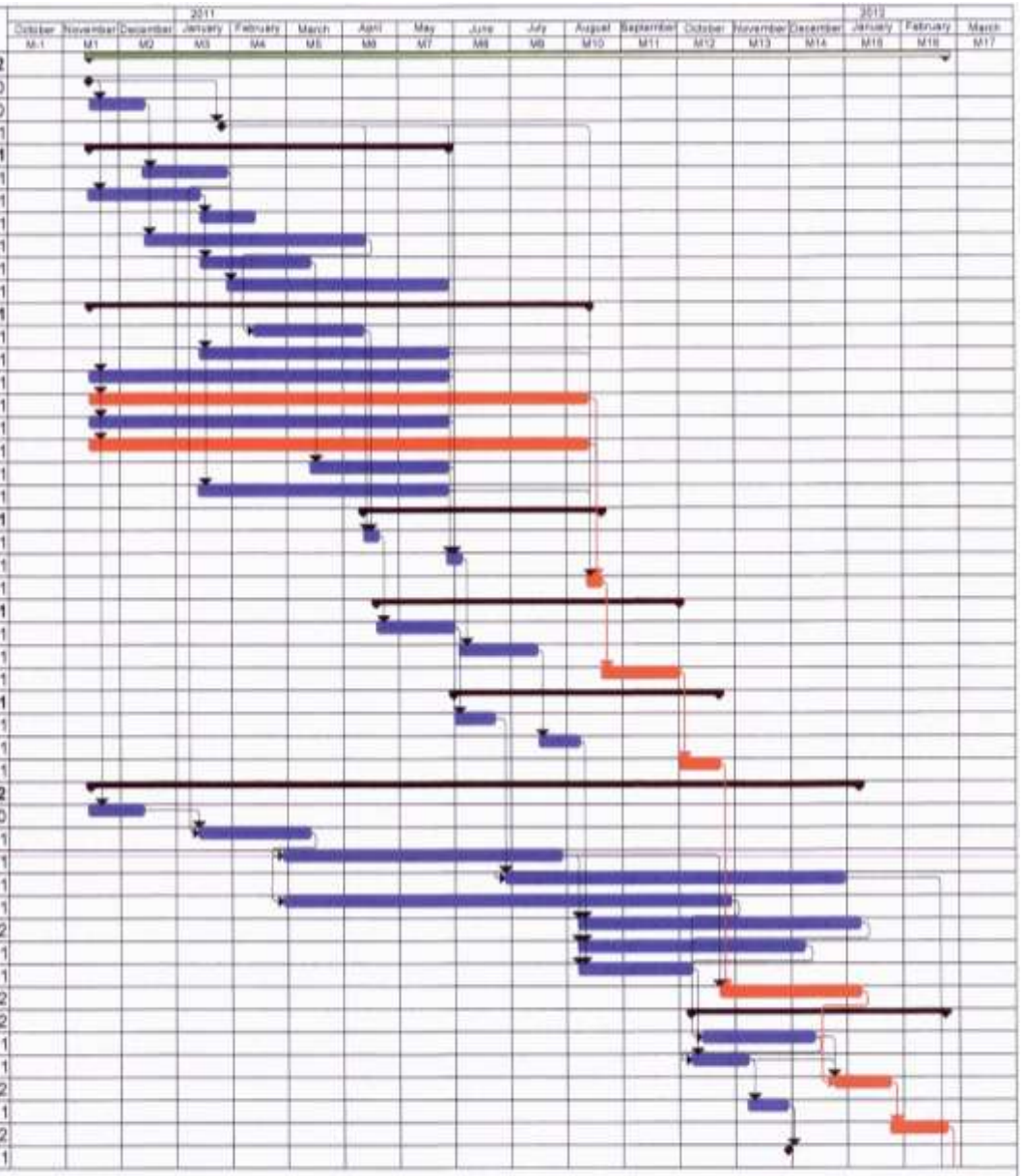
HERA - BETANO POWER PLANTS

PURI AKRAYA ENGINEERING LIMITED



TIME SCHEDULE

ID		Task Name	Duration	Start	Finish
0		Hera 7x18V46rev.2	**330 days**	**Mon 15.11.10**	**Sun 19.02.12**
1		Advance payment by Customer	0 days	Mon 15.11.10	Mon 15.11.10
2		Soil investigation completed by Customer	30 days	Mon 15.11.10	Wed 15.12.10
3		L/C opened by Customer	0 days	Wed 26.01.11	Wed 26.1.11
4		Engineering	**140 days**	**Mon 15.11.10**	**Sun 29.05.11**
5		Soil improvement design	1.5 emons	Wed 15.12.10	Sat 29.01.11
6		Basic design	2 emons	Mon 15.11.10	Fri 14.01.11
7		Foundation design	1emon	Fri 14.01.11	Sun 13.02.11
8		Detailed civil design	4 emons	Wed 15.12.10	Thu 14.04.11
9		Detailed mechanical design	2 emons	Fri 14.01.11	Thu 15.03.11
10		Detailed electrical design	4 emons	Sat 29.01.11	Sun 29.05.11
11		Procurement	**194 days**	**Mon 15.11.10**	**Fri 12.08.11**
12		Building materials	2 emons	Sun 13.02.11	Thu 14.04.11
13		Mechanical auxiliary units	4.5 emons	Fri 14.01.11	Sun 29.05.11
14		Engines 1-3	6.5 emons	Mon 15.11.10	Sun 29.05.11
15		Engines 4-7	9 emons	Mon 15.11.10	Fri 12.08.11
16		Generators 1-3	6.5 emons	Mon 15.11.10	Sun 29.05.11
17		Generators 4-7	9 emons	Mon 15.11.10	Fri 12.08.11
18		Piping, valves & related equipment	2.5 emons	tue 15.03.11	Sun 29.05.11
19		Electrical materials	4.5 emons	Fri 14.01.11	Sun 29.05.11
20		Transportation from factory to FOB port	**91 days**	**Thu 14.04.11**	**Fri 19.08.11**
21		Shipment 1 (Building materials)	1 ewk	Thu 14.04.11	Thu 21.04.11
22		Shipment 2 (EG-sets 1-3, auxiliary units, elec	1 ewk	Sun 29.05.11	Sun 05.06.11
23		Shipment 3 (EG-sets 4-7), remaining auxiliar	1 ewk	Fri 14.08.11	Fri 19.08.11
24		OceanTransportation	**116 days**	**Thu 21.04.11**	**Fri 30.09.11**
25		Shipment 1 (Building materials)	6 ewks	Thu 21.04.11	Thu 02.06.11
26		Shipment 2 (EG-sets 1-3, auxiliary units, elec	6 ewks	Sun 05.06.11	Sun 17.07.11
27		Shipment 3 (EG-sets 4-7)	6 ewks	Fri 19.08.11	Fri 30.09.11
28		**Customs clearance (customer's scope) & inla**	**101 days**	**Thu 21.04.11**	**Fri 21.10.11**
29		Shipment 1 (Building materials)	3 ewks	Thu 02.06.11	Thu 23.06.11
30		Shipment 2 (EG-sets 1-3, auxiliary units, elec	3 ewks	Sun 17.07.11	Sun 07.08.11
31		Shipment 3 (EG-sets 4-7)	3 ewks	Fri 30.09.11	Fri 21.10.11
32		**Site works, customer's scope**	**297 days**	**Mon 15.11.10**	**Wed 04.01.12**
33		Site mobilization	1 emon	Mon 15.11.10	Wed 15.12.10
34		soil improvement work & site clearance	2 emons	Fri 14.01.11	Tue 15.03.11
35		Foundation works	5 emons	Tue 01.03.11	Fri 29.07.11
36		Buildings	6 emons	Wed 29.06.11	Mon 26.12.11
37		Tanks	8 emons	Tue 01.03.11	Thu 27.10.11
38		Mechanical works	5 emons	Sun 07.08.11	Wed 04.01.12
39		Electrical works	4 emons	Sun 07.08.11	Mon 05.12.11
40		EG-set installation 1-3	2 emons	Sun 07.08.11	Thu 06.10.11
41		EG-set installation 4-7	2.5 emons	Fri 21.10.11	Wed 04.01.12
42		**Commissioning, customer's scope**	**97 days**	Thu 06.10.11	Sun 19.02.12
43		Auxiliary systems commissioning	2 emons	Tue 11.10.11	Sat 10.12.11
44		EG-sets commissioning 1-3	1 emon	Thu 06.10.11	Sat 05.11.11
45		EG-sets commissioning 4-7	1 emon	Wed 21.12.11	Fri 20.01.12
46		Testing EG 1-3	0.67 emons	Sat 05.11.11	Fri 25.11.11
47		Testing EG 4-7	1 emon	Fri 20.01.12	Sun 19.02.12
47		Handing over EG-set 1-3	0 days	Sat 26.11.11	Sat 26.11.11



Project Hera 7x18V46rev.2
Date: Sun 31.10.10

Task | Critical Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress | Split | External Task | Project Summary | group By Summary | Deadline

Page 1

ENVIRONMENTAL MANAGEMENT PLANS

February 2011

(pages 119-135 of original report)

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 February 2011. Areas covered by this report are the following:

- Hera Power Plant Site
- Transmission Towers from Hera to Dili
- Transmission Towers from Hera to Manatuto
- Transmission Towers from Dili to Liquica
- Transmission Towers from Baucau to Manatuto
- Dili Sub-Station
- Manatutuo Sub-Station
- Vemasse Camp
- Laclo Camp
- Liquica Camp
- Baucau Camp

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 180MW;
- Construction of 9 Sub-stations all over East Timor
- Laying of transmission lines — 715 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 address the adverse impacts of the project on environment, life, and property are properly followed, while positive impacts are enhanced to gain maximum benefits. Table 1 presents the Summary Environmental Management Checklist as of February 2011.

a) DESIGNATION OF AN ENVIRONMENTAL OFFICER

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

b) DESIGNATION OF A HEALTH/MEDICAL OFFICER

The Contractor has on-site Dr. Wang as the designated Health/Medical Officer. However, the medical officer services aside from the Hera Power Plant, the workers in Dili Sub-Station, Manatuto Sub-Station and the Baucau, Vemasse, Laclo, and Liquica Camps.

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

The QHSE Management Plan as submitted during the Audit of May 2010 has yet to be revised as per Envi Field Directive No. 2 of 01 December 2010. As reported in the previous Audit, the Contractor has yet to prepare the Solid Waste Management Plan for all the facilities and work areas.

d) SPILL CONTINGENCY/EMERGENCY RESPONSE PLAN

The Site Emergency Contingency as submitted during the Audit of November 2010 has yet to be revised as per Envi Field Directive No. 2 of 01 December 2010. 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)

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

The toilet and bath areas at the camp of the Transmission Tower Group (Sub-Contractor) adjacent to the Hera Power Plant are still unsanitary and have not been improved since May 2010. This presents itself as a health and safety risk not only to the occupants of the camp (Transmission Tower Group) but also to the people living in the Main Facility. This was cited in the Envi Field Directive No. 2 issued on 01 December 2010. Since the previous Audit, no improvements have been made to address this concern. Proper sanitary facilities (Toilet and Bath) should be provided the workers/camps to prevent pollution and degradation of the surrounding areas.

TABLE 1. ENVIRONMENTAL MANAGEMENT CHECKLIST — FEBRUARY 2011

PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	PROPOSED MITIGATION MEASURE	COMPLIANCE YES	NO	RESPONSIBLE ENTITIES	REMARKS
PRE-CONSTRUCTION PHASE						
LAND ACQUISITION	Loss of land	Just and fair compensation to landowners.	X		CNI22/ CSC/EDTL	No pending Issue on this.
PLANNING SITE ACTIVITIES	Health hazards and risks to workers and residents of nearby communities	Prepare Occupational Health and Safely Plan	X		CNI22/ CSC/EDTL	Yet to be revised.
	Social conflicts with local residents	Undertake consultations with local residents prior to mobilization	X		CNI22/ CSC/EDTL	Continuing activity
		Priority employment for local workers	X		CNI22/ CSC/EDTL	Local laborers are employed by the Contractor.
		Establishment of grievance/complaints desk at site offices		X	CNI22/ CSC/EDTL	No formal complaints/grievance desk.
CONSTRUCTION PHASE						
ESTABLISHING CONSTRUCTION SITES	Generation of dust from clearing and grubbing	Minimize clearing to required area only	X		CNI22/ CSC/EDTL	Undertaken in required area only.
		Regular watering of exposed areas	X		CNI22/ CSC/EDTL	Undertaken daily.
ESTABLISHING CONSTRUCTION SITES	Soil Erosion due to exposure of topsoil	Re-vegetate when possible and practicable		X	CNI22/ CSC/EDTL	No re-vegetation 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.
	Conflicts with local residents	Undertake consultations with local residents	X		CNI22/ CSC/EDTL	This is an on-going activity.
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Acute elevated levels of TSP/SO_2/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
SITE DEVELOPMENT AND CONSTRUCTION OF FACILITIES	Siltation and sedimentation of nearby water bodies	Containment and construction of siltation ponds and silt curtains		X	CNI22/ CSC/EDTL	None has been installed to date.
		Minimum vegetative removal	X		CNI22/ CSC/EDTL	Complying
		Proper management, handling and disposition of spoils and unsuitable materials	X		CNI22/ CSC/EDTL	Unsatisfactory

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

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

PHOTOGRAPHS

The toilet and bath areas of the Vemasse camp comprise mainly makeshift structures located along the beach area at the back of the main camp. Human waste is directly discharged into the sea with no proper treatment before final discharge into the receiving water body. This is highly unacceptable as this adversely impacts the receiving waters and marine life in the area.

As in the other camps of the transmission tower group, the camp in Laclo also does not have the proper sanitation and bath facilities. Makeshift structures and dug holes are utilized as toilet and bath areas.

The camp in Baucau of the transmission tower group barely contains the basic requirements for decent living. There exists no sanitary facility to address the requirements of the occupants of the camp. The toilet consists mainly of only an open pit located at the back of the compound and there is no bath area provided.

There are no sanitations facilities provided the workers in the Liquica Camp and the area is very unsanitary and unkempt with no basic housekeeping being implemented. Noxious odor emanates from the makeshift toilet area. The residents are complaining of the bad odor which is a nuisance and a health risk to them.

Improvements need to be made in this aspect as the unsanitary conditions in the camps make it unhealthy and unsafe, not only for the workers living in the camps but also for the residents in the adjacent settlement areas. The conditions exiting in the said camps provide very good breeding grounds for mosquitoes and other pests and make it susceptible to the occurrence and spread of diseases. Health and safety risks are very high in these camps.

All the camps of the transmission tower group that was visited, with the exception of the camp in Baucau, have no basic housekeeping being implemented in the facility. Materials, supplies, food and solid waste litter most of the camps and are not properly stored and disposed. This presents itself as a health and safety risks which could adversely affect the workers residing in the camp and the residents in the adjacent areas.

Overcrowding in the camps, specifically the camp in Liquica, which houses over 100 Chinese workers, is also prevalent in most of the facilities. This is a high risk situation for health and safety concerns.

As was observed during the site visits in the transmission tower work areas, solid waste, litter and excess materials are scattered all over the work area Empty bottles of mineral water, used bags of cement, etc. are commonly left in the work sites and are not properly collected and disposed.

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 ENNoP.

g) RELATIONS WITH LOCAL COMMUNITIES AND AUTHORITIES

Consultations are still regularly conducted with the affected communities by the Consultants to inform the local leaders and populace of the on-going works. This serves as a monitoring activity as to the issues and concerns of the stakeholders relevant to the project.

As in most projects of this type, land acquisition and hiring of local workers is the major issue that normally arises. The ROW acquisition for Facilities and Transmission Towers, which is the responsibility of the GoTL, has been adequately and expeditiously addressed.

ROW for access roads for the works currently being undertaken, which is the responsibility of the Contractor, have already been acquired. All ROW issues and concerns have been resolved to date.

Table 2 presents the ROW issues raised from November 2010 to February 2011.

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

DATE	SUBJECT OF COMPLAINT	WORK SITE	SUB-SECTION	REMARKS
12 May 2010	Tower Foundation	N5/N28/N29	Hera to Dili	Resolved
05 July 2010	Tower Foundation	N26/N27/N28/N29	Hera to Dili	Resolved
17 July 201	Tower Foundation	N8/N10	Hera to Dili	Resolved
19 July 2010	Access Road	N27/N28/N29	Hera to Dili	Resolved
04 August 2010	Tower Foundation	N8A	Hera to Manatuto	Resolved
16 September 2010	Tower Foundation	N79	Dili to Liquica	Resolved
17 September 2010	Tower Foundation	N32/N78/N79	Baucau to Manatuto	Resolved
14 October 2010	Tower Foundation	N31	Baucau to Manatuto	Resolved
26 November 2010	Tower Foundation/ Access Road	N78	Dili to Liquica	Resolved

h) PRIVATELY OR COMMUNITY OWNED SERVICES AND STRUCTURES

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

i) OCCUPATIONAL HEALTH AND SAFETY

PROTECTIVE CLOTHING AND SAFETY EQUIPMENT

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

MEDICAL AND FIRST AID FACILITIES

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

SUPPLY OF DRINKING WATER AND SANITATION

Water for the Vemasse camp is sourced from a well drilled within the facility. As per information gathered from the workers residing in the facility, the water is not suitable for human consumption. The water is salty owing to the fact that the aquifer is already salt water intruded as it is located in close proximity of the sea. Drinking water is secured from commercial sources (bottled water) or water is boiled before consumption.

There is no source of domestic water in the Baucau Camp on site and water is delivered to the Compound and stored in a concrete tank. This however is not potable and unfit for human consumption and is mainly utilized for bathing and washing. The workers have to buy bottled water for drinking purposes.

Potable water supply for the Liquica camp is sourced from the Dili Water Distribution System and is conveyed to an overhead tank where it is stored.

TEMPORARY FACILITIES FOR WORKERS INCLUDING SANITATION AND WASTE DISPOSAL

The Camp of the Transmission Tower Group (Sub-Contractor) in Hera Power Plant has been provided with makeshift tents however this is still unacceptable. The sanitation facilities have not been improved since the last audit done in may 2010.

The accommodations provided in the Vemasse Camp are acceptable. This houses approximately

100 Chinese workers doing the Baucau to Manatuto Transmission Line. As mentioned in previous sections of this report, the sanitation facilities in the camp are unacceptable and should be improved.

The makeshift structures utilized as toilet and bath areas in the Laclo Camp, similar to those in the other camps, are unacceptable.

There exist no sanitary facilities to address the requirements of the occupants of the Baucau camp. The toilet consists of only an open pit located at the back of the compound and there is no bath area provided.

There are no sanitations facilities provided the workers residing in the Liquica Campand the area is very unsanitary and unkempt with no basic housekeeping being implemented. Noxious odor emanates from the makeshift toilet area. The residents are complaining of the bad odor which is a nuisance to them.

As was observed in all the facilities of the Contractor, basic housekeeping is not strictly implemented. In most of the camps and facilities visited, solid waste, materials, etc are scattered and are not properly stored, handled and disposed

TRAFFIC MANAGEMENT

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

2. ENVIRONMENTAL MONITORING

An integral part of the environmental protection is the continuous monitoring of the condition of the receiving environment to determine if any undesirable changes are occurring as a result of the project. The 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

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

E. ISSUES AND CONCERNS

- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December, the Contractor is obligated to secure the requisite **Environmental Permits and Clearances from the National Directorate for Environmental Conservation**. To date, the Contractor has not presented the necessary Development Permits and Clearances as required by the National Laws, Rules and Regulations of the GoTL.
- As was cited in the previous audit, the EMMoP stipulates that a Baseline Survey for Air, Noise and Water Quality. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010. The Contractor has not yet conducted this activity to date
- As was cited in the previous audit, the EMMoP stipulates that Monthly Environmental Monitoring for Air, Noise and Water Quality be conducted as expounded in Table 3 of the said

EMMP. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010 but has yet to conduct this activity to date.

- As was cited in the previous audit, the Contractor should submit a Monthly Environmental Management and Monitoring Report, the format for which is presented in Annex B of the said EMMP. The Contractor was directed to immediately comply with this requirement in the Field Directive Envi 02 dated 01 December 2010 but has yet to comply to date.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, a formal grievance and complaints desk should be established by the Contractor in the facilities to receive complaints, issue and concerns of the stakeholders. The Contractor should have on his staff a Community Relations Officer (CRO) that will liaise and coordinate with the local communities together with the local staff of the Consultants. This has yet to be complied with by the Contractor
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010 the EMMoP stipulates that (see Item 4.1.3) the Contractor should prepare a Solid Waste Management Plan and submitted to the Consultants within one (1) month of his arrival on-site. The Contractor has yet to comply with this requirement to date.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010 the Contractor was directed to construct siltation ponds to address discharge of silted runoff into nearby receiving bodies of water. To date, the Contractor has yet to comply with this requirement.
- Oil and grease traps in drainage systems from workshops, vehicle washing facilities and service and fuelling areas have yet to be installed by the Contractor. The Contractor was already cited for this in the previous audit and the Field Directive Envi 02 issued in 01 December 2010.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December, appurtenant pollution control devices should be installed in the ancillary facilities such as the Batching Plant within the Hera Power Plant Particulate Matter (PM) and wastewater generated by the operation of the plant need to be addressed to mitigate health risk to workers and mitigate further degradation of nearby water bodies. The Contractor has yet to comply with this requirement.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December, the Site Emergency Contingency Plan and the Quality, Health, Safety and Environment Management System as prepared by the Contractor should be revised to include pertinent operational details. This has yet to be complied with by the Contractor.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, the Contractor was directed to provide a separate medical facility for the Dili Sub Station with the requisite medical officer, equipment and supplies. This should also be undertaken in the other facilities and camps. No compliance has been made by the Contractor on this item.
- As was cited in the previous audit and as per Field Directive Envi 02 dated 01 December 2010, the accommodations provided the Transmission Tower Construction Group adjacent to the main facility in Hera is unacceptable, unsanitary and unhygienic and poses a grave health and safety risk to the workers. The Contractor was directed to rectify this but has yet to comply. Proper accommodations with the requisite sanitation facilities should also be provided the other camps in the project.

F. RECOMMENDATIONS

1. As contained in the site instruction Envi. No. 01 issued on 01 December 2010, proper accommodations with the requisite sanitation facilities should be provided the Transmission Tower Group located adjacent to the main Hera Camp.

2. The Contractor engage a full-time Environmental Specialist for the Project, preferably with a good command of the English language to be responsible for the implementation of the EMMoP and other environmental concerns.
3. Work areas, specifically Transmission Tower Sites, should be kept free of solid waste and litter every end of work day. Solid waste and litter should be collected and transported to the main camps and properly disposed off in sanitary disposal areas.
4. The Vemasse Camp should be provided with sanitary toilet and bath facilities with the requisite treatment facilities so as not to adversely impact the receiving body of water adjacent to the Camp. Discharge of untreated effluents should be discontinued until proper treatment facilities are established in the Camp.
5. Potable water supply should also be provided the Vemasse camp to preclude the occurrence of attendant diseases related to the ingestion of non-potable water.
6. The accommodations provided in the Vemasse camp are cramped with an average of 15 workers occupying each room. Additional rooms should be constructed as this condition is unhealthy and is very conducive to the spread of contagious diseases.
7. Proper housekeeping and materials storage should be implemented in the Vemasse Camp. This would prevent conditions that would allow pests, rodents and other vectors to proliferate in the area.
8. With an estimated 100 workers in the Vemasse Camp, it is imperative that proper medical facilities be provided. This should include the requisite medical officer and equipment and ample supplies to cater to the medical requirements of the workers.
9. Proper accommodations and facilities with the requisite sanitation facilities should be provided the, Vemasse, Laclo, Liquica and Baucau Camps. Basic housekeeping should be implemented in the said camps.
10. Medical/health facilities with the requisite medical officer, equipment and supplies should be provided the Manatuto Sub-Station and all other major facilities and camps.
11. The lined canal where the effluent from the Manatuto Sub-Station is discharged should be properly maintained and regularly declogged. Treatment of the effluent should be undertaken before final discharge.

G. CONCLUSIONS

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

OCCUPATIONAL SAFETY & HEALTH (OSH)

CNI22

The Chinese contractor, even if they lack the basic knowledge on international safety standards have been willing in many occasions to follow instructions given by the consultant safety engineer by a setback is their preference to have the corrective actions on a temporary basis as against the long term solution that will be cost effective and will produce good and desired results. It is also good to note that some Chinese leads assigned to substations are receptive to suggestions/recommendations to some safety practices during our visits and this makes the site more safer for the workers as it eliminates or minimizes the risks associated with the work or of the site condition. There is

a need to continuously monitor the implementation as it seems they revert back to their old ways when not repeatedly visited and the risk gets higher once there is laxity on their part to follow the proper safety practices established.

SUBSTATIONS AND HERA FUEL TANK CONSTRUCTION.

- ✓ GENERALLY, all substations do not have the required signages which had been communicated over and over to CNI22's safety engineer but has not been implemented. Most common safety infractions committed is the non-wearing of PPEs which has been provided to them by CNI22 management. Even the local hires had been given the required PPEs, i.e. Hart Hat and Safety Shoes but are not worn while performing their work at the construction site. These problems are more on the behavioral nature which do not seem to be addressed for there is no strong policy regarding discipline and the penalty that corresponds to the degree of violation committed. Another area that needs improvement is the medical services at substations where they do not have a practicing nurse or a trained First Aid personnel where part of their responsibility is to ensure that basic facilities such as dining and rest rooms are hygienic and sanitary to prevent diseases caused by improper conditions at site. This will be one of the main topics that will be discussed during the weekly coordination meeting.
- ✓ TRAFFIC SIGNAGES or WARNING SIGNS such as «you are entering a construction area>> Ex. CAUTION DRIVE WITH CARE CONSTRUCTION AREA AHEAD; SLOW DOWN HEAVY EQUIPMENT CROSSING etc. has yet to be placed even when it has been communicated to both contractors. This will be reiterated again this coming joint weekly coordination meeting with both contractors, CNI22 and PAE.
- ✓ At excavation place warning signboard such as; DANGER DEEP EXCAVATION; Instructions to install BARRICADES /WARNING TAPES to excavation to warn operators/workers of the danger.
- ✓ To any moving equipments such as crane; DANGER HEAVY LIFTING IN PROGRESS, or warning sounds to alert workers of moving equipments.
- ✓ ALWAYS use a LADDER for any excavation exceeding 1.5 meter depth extending three feet (3') above the landing and isolated with barrier tape. Hand railings shall be provided to all working platform with a minimum height of 2.0 meters above/below the ground surface.
- ✓ Place at the main gate of every site signboard – SAFETY BEGINS HERE, ALWAYS WEAR YOUR (PPE) PERSONAL PROTECTIVE EQUIPMENTS, hardhat, safety shoes and proper working clothes.
- ✓ SPEED LIMIT inside the construction site is 20 KM / hr.

TRANSMISSION LINE WORK:

PREVENTATIVE MEASURES:

FOUNDATION AREA:

- ✓ Install RED/YELLOW WARNING TAPE to prevent outsiders from entering the hazardous work place. This will isolate the
- ✓ EXCAVATIONS - a LADDER must be used as access in going into the pit. Since most of the soil at construction areas are Class B and in some areas, Class A (rock), there is no need for protective systems such as sloping, benching, shoring etc.
- ✓ SAFETY SIGNAGES – The following signages must be present, a).DANGER EXCAVATION AREA, b). PPE REQUIRED, HARD HAT, SHOES, c). UNATHORIZED PERSONS NOT ALLOWED,

TOWER ERECTION:

- ✓ For towers erection and conductors stringing, place signboards such as; ALWAYS WEAR SAFETY HAT, SAFETY BELT, SAFETY SHOES, WORKING GLOVES and PROPER WORKING CLOTHES.

CSI (COMORO POWER PLANT)

A visual inspection was made but unfortunately, no work was on-going as it was still the rest period of the Chinese nationals, 2:00PM but what was observed on the construction site was the soil which was oil laden or contaminated, saturated with oil. Another visit will be scheduled to seek their safety documentation or procedures along with the safety staff that will be assigned to this project. Monitoring will be regular to ensure safety will be integrated as part of the expectations and the contractor's deliverables during the project execution.

SAFETY MANAGEMENT INITIATIVES:

To better manage and standardize the safety implementation of the whole project, a joint weekly safety coordination meeting with both the Indonesian and Chinese contractor has been set to meet every Friday, 3:00PM and had already started for which a two-way communication has been established to further improve the relationship and understand what has to be accomplished in achieving the goal for this project which is Zero Accidents, Zero Injuries. We are dealing with two different cultures with different ways of how safety is practiced and we are looking at finding ways to reach a common ground in the interpretation of safety guidelines that will be acceptable to all parties. A common agreement reached was the provision of safety glasses for all workers and this has yet to be confirmed if this will be followed by all sites. The meeting will also be a venue for additional information on safety will be shared among all safety officers assigned to the different substations and power plant sites just so coverage will be maximized. The basic idea is to show them through pictures taken from different sites and identify what is wrong and how it should be properly corrected in the process everybody learns and understands what should be done.

PROBLEMS / ISSUES AND RECOMMENDATIONS

Problems/Issues Encountered:

1. Communication problems for technical staff and workers of the contractor who cannot speak nor understand the English Language. Consultant's Inspectors find difficulty to give direct instructions on site to Chinese workers due to communications barrier with oftentimes no responsible Supervisor present on site.
2. Returned Drawings with comment to the Contractor for revision were not submitted back to the Consultant for stamping of "APPROVED FOR CONSTRUCTION".
3. Work preparation is not carefully plan or following the submitted schedule to suite the existing site condition to prevent lost time and resources on the part of the Contractor.
4. Unprofessional handling of the materials during loading, unloading and transporting from the yard to the site that causes minor to heavy damages of the materials.
5. Unsafe working practice and procedures in the jobsite, warning signs for incoming vehicles are not placed along the main roads to preclude accidents; PPE 's for workers is not strictly implemented.
6. Lacking of Coordination to local residents around the sites is not properly handled.
7. Lack of drainage around the substation to prevent excessive muddy section in the construction sites.
8. Sprinkling of water around the working area is not strictly implemented.

Recommendations/Actions:

1. The Contractor must provide technical staff good in English communication to facilitate better understanding to the field instructions issued by the Owner's Representatives and Consultant.
2. The Contractor is instructed to submit ALL RETURNED DRAWINGS WITH COMMENTS to the Consultant for proper stamping of *approved for construction*.
3. The Contractor's supervisors, particularly QA/QC personnel, and Safety Officer must inspect always and monitor the works conducted on sites to guarantee that all works are according to approved plans and specifications and upholds the safety program at the construction sites.
4. The Contractor's must employ more qualified staff / workers in handling the loading and unloading of materials.
5. Safety practices and programs must be carefully addressed on site to maintain the safety awareness of workers gear up to a higher level. The Contractor should also supply the protective gears to all staffs and workers which must be strictly worn by everybody on the jobsite
6. The Contractor must employ a local staff designated to coordinate only with the local residents along the project sites in order to avoid any conflicts that has been lingering on the mind of the local residents.
7. The Contractor is reminded that during the rainy season, all sites must be ready for any eventualities and maintain the construction site by providing temporary drainage lines around the area to avoid any muddy section that will peril or hamper any scheduled activities.
8. Contractor whenever possible must spray water around the working site to prevent dust and maintain good visibility in order to insure the safety of workers from vehicles accidents.