

Republic of the Philippines
ENERGY REGULATORY COMMISSION
San Miguel Avenue, Pasig City

IN THE MATTER OF THE
APPLICATION FOR APPROVAL OF
THE EMERGENCY CAPITAL
PROJECTS — RE: TRANSFER AND
INSTALLATION OF THE 3.75 MVA IN
LIANGA AND THE UPGRADING OF
THE MADRID SUBSTATION FROM
3.75 MVA TO 5 MVA, WITH PRAYER
FOR PROVISIONAL AUTHORITY



ERC CASE NO. 2008-051 MC

SURIGAO DEL SUR II ELECTRIC
COOPERATIVE, INC. (SURSECO II),
Applicant.

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D O C K E T E D
Date: DEC 18 2008
By: [Signature]

DECISION

Before this Commission for resolution is the application filed on April 9, 2008 by Surigao del Sur II Electric Cooperative, Inc. (SURSECO II) for approval of the following emergency capital projects: a) Transfer and Installation of the 3.75 MVA in Lianga; and b) Upgrading of the Madrid Substation from 3.75 MVA to 5 MVA, with prayer for provisional authority.

Having found said application sufficient in form and in substance with the required fees having been paid, an Order and a Notice of Public Hearing, both dated April 25, 2008, were issued setting the case for initial hearing on May 15, 2008.

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In the same Order, SURSECO II was directed to cause the publication of the Notice of Public Hearing, at its own expense, once (1x) in a newspaper of general circulation in the Philippines, with the date of publication to be made not later than ten (10) days before the scheduled date of initial hearing. It was also directed to inform the consumers, within its franchise area, by any other means available and appropriate, of the filing of the instant application, its reasons therefor, and of the scheduled hearing thereon.

The Office of the Solicitor General (OSG), the Commission on Audit (COA) and the Committees on Energy of both Houses of Congress were furnished with copies of the Order and the Notice of Public Hearing and were requested to have their respective duly authorized representatives present at the initial hearing.

Likewise, the Offices of the Mayors of the Municipalities within SURSECO II's franchise area were furnished copies of the Order and the Notice of Public Hearing for the appropriate posting thereof on their respective bulletin boards.

On April 22 to 24, 2008, the Commission conducted an ocular inspection on SURSECO II's assets subject of the instant application.

On May 9, 2008, SURSECO II filed its "*Pre-trial Brief.*"

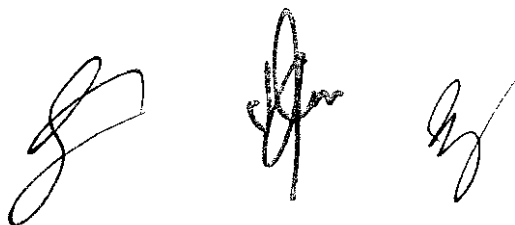


During the May 15, 2008 initial hearing of this case, only SURSECO II appeared. No intervenor/oppositor appeared nor was there any intervention/opposition registered.

In the said hearing, SURSECO II presented its proofs of compliance with the Commission's posting and publication of notice requirements which were duly marked as Exhibits "A" to "V-1", inclusive. Thereafter, it conducted an expository presentation of its application.

At the termination of the expository presentation, SURSECO II presented its first witness, Engr. Iglorio Hinayon, its General Manager, who testified, among others, on the following matters: a) the need for the immediate transfer and installation of the 3.75 MVA transformer in Lianga; b) the urgent need to upgrade the transformer at the Madrid Substation from 3.75 MVA to 5 MVA; c) the various projects of SURSECO II which were approved by its Board of Directors; d) the financing requirement for the emergency capital expenditures; and e) the utilization of its Reinvestment Fund.

Subsequently, it presented its second witness, Engr. Reynaldo R. Trimidal, its Technical Service Department Manager, who testified on the following matters: a) the details of its Emergency Capital Projects; b) justifications of the urgent implementation of the said projects; c) the five (5) year historical and forecasted planning data; and d) the conceptual engineering design and drawings and projected economic cost analysis for the projects.



In the course of their respective direct examinations, the witnesses identified various documents in support of the application. Said documents were duly marked as exhibits.

The direct examinations of the said witnesses having been terminated, the Commission propounded clarificatory questions.

On June 2, 2008, SURSECO II filed its "*Formal Offer of Evidence*" which is hereby admitted for being relevant and material in the final resolution of the case.

DISCUSSION

SURSECO II sought the Commission's approval of the following projects:

1. Construction and Installation of 3.75 MVA Substation at Brgy. Ganayon, Lianga, Surigao del Sur

a. Project Description:

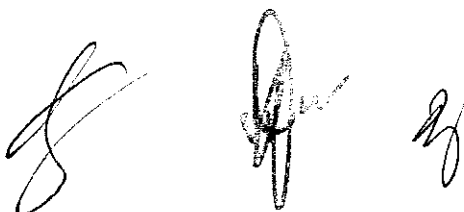
- Construction, installation, and transfer of a new substation to Lianga, Surigao del Sur utilizing the existing 3.75 MVA power transformer from Madrid Substation

b. Rationale of the project:

- To minimize power interruption in its augmented service area coverage
- To serve the load of the Municipalities of Lianga and San Agustin

c. Project Cost:

PhP11,806,694.00



2. Upgrading of Madrid Substation from 3.75 MVA to 5 MVA

a. Project Description:

- Upgrading from 3.75 MVA to 5 MVA power transformer with standard accessories and take-off structures

b. Rationale of the project:

- To enhance power supply flexibility and promote reliability in the Municipalities of Carrascal, Cantilan, Madrid, Carmen and Lanuza, which comprise the northern part of Surigao del Sur
- To meet increasing power demand in the said municipalities

c. Project Cost:

PhP20,000,000.00


Thus, the total project cost is as follows:

DESCRIPTION	COST (PhP)
Construction and Installation of 3.75 MVA Substation at Brgy. Ganayon, Lianga, Surigao del Sur	11,806,694.00
Upgrading of Madrid Substation from 3.75 MVA to 5 MVA	20,000,000.00
TOTAL PROJECT COST	PhP31,806,694.00

TECHNICAL ANALYSIS

Installation of 3.75 MVA Substation in Lianga

With the use of the actual loading at the existing feeders (F1 and F2) serving the Municipalities of Lianga and San Agustin, analysis was conducted to show the resulting energy losses using a load logger. The same process was



used in the analysis of a 3.75 MVA transformer if it is installed in Lianga. Result of the analysis showed significant benefits, as follows:

Monthly Energy Consumption (kWh)	378,831.35
a. Energy Losses/mo (kWh) (remain connected with SURSECO I)	47,353.92
b. Energy Losses/mo (kWh) (if 3.75 MVA is installed in Lianga)	<u>36,805.73</u>
c. Total Monthly Energy Savings (kWh)	10,548.19
a. Effective Rates, Month of June 2008	PhP6.1474/kWh
b. Monthly Benefits from Installing the 3.75 MVA at Lianga	PhP64,843.94

The above simulations showed that 2.78% reduction in technical system loss will be realized in installing the 3.75 MVA substation in the Municipality of Lianga.

Replacement of the 3.75 MVA with a 5 MVA Power Transformer

With the use of actual loading of the transformer multiplied by the behavior of the load Per Unit (PU) of the existing 3.75 MVA, analysis was conducted to show the resulting energy losses. It included the technical data from the transformer's manufacturer as input data in the calculation and the reactive/resistance (X/R) ratio based on the Institute of Electrical and Electronics Engineer (IEEE) Standard C37.010-1979. X/R ratio was used to calculate the winding loss based on the transformer loading. The same process was used in the analysis of the existing 3.75 MVA transformer if it is replaced with a 5 MVA transformer. Result of the analysis showed significant benefits, as follows:



Monthly Energy Consumption (kWh)	1,237,038.26
a. Energy Losses of 3.75 MVA (kWh)	320,310.41
b. <u>Energy Losses of 5 MVA (kWh)</u>	<u>282,828.62</u>
Total Monthly Energy Savings (kWh)	37,481.79
c. Effective Rates, Month of June 2008	PhP6.1474/kWh
d. Monthly Benefits from Installing the 5 MVA at Madrid Substation	PhP230,415.56

The above simulations showed that 3.03% reduction in technical system losses will be realized with the replacement of a 3.75 MVA by a 5 MVA transformer at the Madrid Substation.

Based on the load test conducted in November 2007, the 3.75 MVA Madrid Substation is already 80% loaded. At this level, it can no longer accommodate additional load without the risk of accident that could result to damage to life and property. Thus, its upgrading is necessary and vital to meet the increasing power demand in the area forecasted at 2% annually. The 5 MVA power transformer is expected to reach its maximum loading by the year 2016.

COST IMPACT OF THE PROJECTS ON RATE

Since the average rate of Reinvestment Fund (RF) collection of SURSECO II in the amount of PhP0.14/kWh is higher than the cost impact on rates of the proposed projects in the amount of PhP0.10/kWh, SURSECO II does not need a rate adjustment to recover the cost of the proposed projects.



COST ANALYSIS

a. Project Cost	-	PhP50,682,351.00
b. Rate Impact of the Proposed Projects	-	PhP0.10/kWh
c. Energy Loss Reduction Annually	-	576,379.76 kWh
d. Genco and TransCo Rate for Month of June 2008	-	PhP4.7275/kWh
e. Annual Net Savings (c x d)	-	PhP2,724,740.77
f. Return on Investment (ROI)	-	5.38%
g. Payback Period (PP) (1 / f)	-	18.60 years

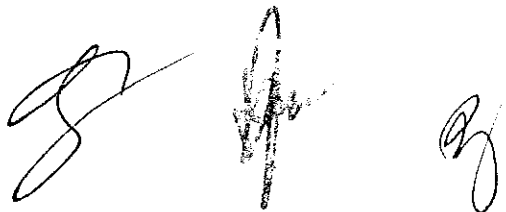
FINANCING AND FUNDING OF THE PROJECTS

The installation of the 3.75 MVA Substation at Ganayon, Lianga will be funded through a loan from the National Electrification Administration (NEA) broken down as follows:

Descriptions	Amount (PhP)
1. 3.75 MVA Power Transformer ¹	0.00
2. Standard Accessories with metering equipment	8,806,694.00
3. Steel structures-take off poles	1,200,000.00
4. Grounding	300,000.00
5. Civil Works	1,500,000.00
6. Interest for ten (10) years @ 10% per annum (diminishing)	7,006,673.00
Total	18,813,367.00

The lot intended for the new Lianga Substation was acquired through donation from the Local Government Unit (LGU) of Lianga.

¹ This existing 3.75 MVA from Madrid Substation will be transferred/installed in the proposed Lianga Substation.



The upgrading of Madrid Substation from 3.75 MVA to 5 MVA will, likewise, be funded through a loan from the NEA, broken down as follows:

	Descriptions	Amount (PhP)
1.	5 MVA Power Transformer with standard accessories	19,500,000.00
2.	Take-off structures	500,000.00
3.	Interest for ten (10) years @ 10% per annum (diminishing)	11,868,984.00
	Total	31,868,984.00

A perusal of the evidence presented herein showed that the completion of the aforesaid projects will redound to the benefit of SURSECO II's consumers in terms of continuous, reliable and efficient power supply as mandated by Republic Act No. 9136, or the *Electric Power Industry Reform Act of 2001* (Section 2. *Declaration of Policy – (b) “to ensure the quality, reliability, security and affordability of the supply of electric power”*).

WHEREFORE, the foregoing premises considered, the application for the approval of the following emergency capital projects: 1) Transfer and Installation of the 3.75 MVA in Lianga; and 2) Upgrading of the Madrid Substation from 3.75 MVA to 5 MVA, with prayer for provisional authority, filed by Surigao del Sur II Electric Cooperative, Inc. (SURSECO II) is hereby **APPROVED**.

Relative thereto, SURSECO II is hereby directed to pay the permit fee in the amount of Two Hundred Thirty-Eight Thousand Five Hundred Fifty Pesos and

Twenty Centavos (PhP238,550.20) within ten (10) days from receipt hereof, computed as follows:


$$\frac{\text{PhP}31,806,694.00}{\text{PhP}100.00} \times \text{PhP}0.75 = \text{PhP}238,550.20$$

Further, SURSECO II is directed to: a) file a joint application with the Surigao del Sur I Electric Cooperative, Inc. (SURSECO I) for the approval of their Memorandum of Agreement (MOA); b) submit the total actual costs upon completion of the proposed projects; and c) submit proofs of the competitive biddings conducted including post bidding process of the major project items indicating therein the following:

- a) The invitation to submit proposals and to bid;
- b) The date of publication in a newspaper of the "Invitation to Pre-qualify and to Bid;"
- c) The number of suppliers that submitted proposals; and
- d) Reasons/justifications why it is favorable for SURSECO II to award the purchase of major items to a participating bidder.

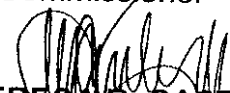
SO ORDERED.

Pasig City, December 2, 2008.


ZENAIDA G. CRUZ-DUCUT
Chairperson


RAUF A. TAN
Commissioner


ALEJANDRO Z. BARIN
Commissioner


MARIA TERESA R. CASTAÑEDA
Commissioner


JOSE C. REYES
Commissioner

Copy Furnished:

1. **Atty. Zenon S. Suarez**
Counsel for Applicant
Room 311 WEB-JET Bldg.
64 Quezon Avenue corner BMA Street
QUEZON City
2. **Office of the Solicitor General**
134 Amorsolo Street, Legaspi Village
Makati City, Metro Manila
3. **Commission on Audit**
Commonwealth Avenue
Quezon City, Metro Manila
4. **Senate Committee on Energy**
GSIS Bldg., Roxas Blvd., Pasay City
Metro Manila
5. **House Committee on Energy**
Batasan Hills, Quezon City, Metro Manila
6. **Engr. Iglorio B. Hinayon**
General Manager
Surigao Del Sur II Electric Coop., Inc. (SURSECO II)
Tandag, Surigao Del Sur
7. **The Municipal Mayor**
Tandag, Surigao Del Sur
8. **The Municipal Mayor**
Bayabas, Surigao Del Sur
9. **The Municipal Mayor**
Cagwait, Surigao Del Sur
10. **The Municipal Mayor**
Cantilan, Surigao Del Sur
11. **The Municipal Mayor**
Carmen, Surigao Del Sur
12. **The Municipal Mayor**
Carrascal, Surigao Del Sur
13. **The Municipal Mayor**
Cortes, Surigao Del Sur

14. **The Municipal Mayor**
Lanuza, Surigao Del Sur
15. **The Municipal Mayor**
Madrid, Surigao Del Sur
16. **The Municipal Mayor**
Marihatag, Surigao Del Sur
17. **The Municipal Mayor**
San Agustin, Surigao Del Sur
18. **The Municipal Mayor**
Tago, Surigao Del Sur
19. **The Municipal Mayor**
San Miguel, Surigao Del Sur
20. **National Electrification Administration (NEA)**
NIA Road, Diliman, Quezon City, Metro Manila