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Preface

The book contains some important facts of companies and industrial plants visited by fifth year BSEE students last November 12 to 18, 2012. These data come multiple origins; brochures, pamphlets and internet. Thus, the author collects these things for the formulation of this book.

The author discuss the history, location or sites, owner, raw materials, facilities and equipments, product and services and some community project of the companies and industrial plants visited.

The present book aims to combine the best features of the companies and plants and hence to be a maximum usefulness to those who seek word facts.

Also include in this book are the memoirs of the author happened in daily activities during the educational field trip.

Acknowledgement

The wishes to express his heartfelt gratitude and appreciation to the people who had contribute measurably in the completion of this book.
To my beloved alma mater, University of Southeastern Philippines under whose roofs realized the important knowledge that they imparted;
To my mentors, Engr. Froilan Sison for guiding me during the trip;
To my family, for their moral and financial support;
To all my friends and classmates who were there to help and guide me and inspire me;
To the companies and industrial plants, for giving us time to share and lecture regarding their company and their field specializations;
Dash Engineering Philippines, Inc.
Coca-cola Bottlers Company
Uratex foam
Cebu Mitsumi Inc.
ABS-CBN Broadcasting Corporation
Salcon Power Corporation (SPC)
Visayan Electric Company (VECO)
Gardenia Bakeries Philippines
East Asia Utilities

And above all, to the almighty God who is the source of all wisdom, strength, determination and inspiration. And I am very thankful and graceful for his great help in making this book possible and carrying it into completion.

Introduction

The fifth year Bachelor of Science in Electrical Engineering students of the University of Southeastern Philippines are having an educational tour to certain companies and industrial plants related to their distinct electrical fields. This is done annually for the requirements in EE-522(Seminars and Field trips)

The six-day field trip gives the student a real exposure and offers them a wonderful episode of being a tourist. One EE instructor and a representative from a travel agency accompanied the students to guide and facilitate them of their plant visit and other important activities.

The students travelled by land from Davao City to Cagayan de Oro City. Then they moved y ship to Cebu City where they spent four memorable which are our days to reminisce in the future. The companies and plants conducted seminars or a concise lecture about its existence, operations, its product and labor force. In their visit, the tourist guide, to some areas in the company, facilitates them in their question are properly entertained.

This activity is indeed relevant because it is very educational. It gives every student a chance to freely comprehend and asked pertinent questions about the companies’ production and manufacturing process with their modern devices and equipment, manpower, waste management and many other things that could help them somehow in the future.

Dash Engineering Philippines, Inc.

Over 21 years of existence in the field of Plant Engineering & Shipbuilding industry, Dash Engineering Philippines Incorporated (DASH) has established its identity as a trusted Engineering Design firm. With a promising performance, the company conducts businesses with international clientele in numerous countries across the globe. DASH is the only subsidiary company of Mitsui Zosen Plant Engineering Inc.,(MEP) of Japan that is based in the Philippines, located at 8th floor IL Bldg., Asiatown IT Park, Lahug, Cebu City. DASH works hand-in-hand with MEP in providing quality services at competitive costs through creditable technology and at the same time contributing to the development of the society and individuals. DASH has been awarded with International Organization for Standardization ISO 9001: 2000 in compliance with Quality Management System and Information Security Management System.

HISTORY OF DASH ENGINEERING

Currently, DASH has expanded its manpower resource to almost 500 employees working in diverse job scopes related to plant engineering, shipbuilding, information technology and administrative works. DASH Engineering Philippines Incorporated (DASH) entrenched its start in April 29, 1992. With only 10 pioneering employees. 1992 DASH Engineering Philippines Incorporated (DASH) started in April 29, 1992 with only 10 employees as its pioneering group headed by the first President of DASH, Mr. Shigeyasu Honju. The company registered under the Philippines Security and Exchange Commission as an engineering services industry. 2001 Mr. Yukihiro Mimura took over as the new president of DASH together with his vision for the company, “ to become the number one engineering company in the Philippines.”

DASH then carried out its first office relocation from Lapu-lapu to Pag-ibig Fund and Workers Tower in Mindanao Ave., Cebu Business Park, Cebu City. 2002 DASH celebrated its 10th year anniversary which was highlighted by the visit of MES’ Managing Director, Mr. Takahisa Nakada 2004 DASH acquired its ISO Certification for Quality Management System (QMS) in Plant Engineering: ISO 9001: 2000. 2005 DASH acquired its ISO Certification for Quality Management System (QMS) in Shipbuilding: ISO 9001: 2000. DASH has acquired its Philippine Economic Zone Authority (PEZA) certification in 2005, allowing the company to conduct business in an economic zone. In this year, DASH started its Sports Program which is basically funded and supervised by the company; but managed by the elected officers from among the employees to ensure the inclusion of several sports activities that really interest the employees themselves. 2007 DASH celebrated its prosperity highlighted upon reaching its 15th year anniversary under the good leadership of Mr. Yukihiro Mimura as the president of the company.

2008 In 2008, DASH set forth as the first engineering company in the Philippines to be an ISO/IEC 27001: 2005 certified for best practice on Information Security Management System (ISMS) based on the information security management standards published by the International Electrotechnical Commission (IEC). MES President Mr. Yasuhiko Katoh visited DASH office last October 2008 together with other top executives of MES, Mr. Saborou Sakamaki, Managing Director for Corporate Finance, Mr. Makoto Kamishima, Managing Director for Corporate Planning, and Mr. Mitsuru Takayama, General Manager for Palnt and Environment. PRODUCTS AND SERVICES

Plant Engineering Division

The Plant Engineering Division of DASH has been involved in several projects for nearly two decades utilizing the full potential of manpower as well as software resource. The company’s integrated plant engineering design handles and generates design specifications, engineering drawings, data sheets and construction drawings. The services of the company inline with plant engineering includes procurement for plant equipment and bulk materials, plant construction management and project engineering management. Shipbuilding Division

The Shipbuilding Division of DASH was eventually organized to work with Mitsui Engineering and Shipbuilding (MES) in its ship engineering and design feat. Such specialty in shipbuilding encompasses the engineering and design of merchant bulk carriers, training ships, explorer and drilling ships, container carriers, fishing vessels, buoy tender vessels, etc. Through the years the Shipbuilding Division has gained its reputation as the company’s pride in the field of competitive ship engineering and design. Advanced Machinery Division

The Advanced Machinery Division in DASH entrenched its start from a Diesel Engine Design Group in year 2003, and later added Rotating Machinery Design and Crane (Logistic) Design, to create DASH’s division that provides designs for advanced machinery and equipment for the marine and offshore industries around the globe. Gearing with three engineering design specialization, Advanced Machinery Division revolutionizes such job scopes by integrating highly sophisticated engineering design softwares in both 2D and 3D procedures. Thus, the three groups of the division provide computer aided engineering design for Portainer (Quay side or Ship to Shore Gantry Crane) and Transtainer (Rubber Tired Gantry Crane); Reciprocating Compressor (Parts and Assembly); and Marine Use Diesel Engine.

The President on CSR

The firm conviction that Corporate Social Responsibility must be ingrained in one’s life is the foundation of a solid commitment to holistic sustainability. DASH Engineering Philippines Inc. does business with this conviction. In all our corporate decisions, we essentially honor the triple bottom line: People, Planet and Profit. Our People

Our team members are the very core of CSR. To augment these principles, we invest much on our Occupational Safety and Health Committee (OSHC) through our medical and sports programs making everyone healthy, capable, and well-equipped. We also recognize the cooperation, inquisitiveness, kindness and passion of the Filipino people as a potent force for change and progress.

Coca-cola Bottlers Company

The Coca-Cola Bottlers Philippines, Inc. (CCBPI) is engaged in bottling and distribution of soft drinks. The company was founded in 1981 and operates as a wholly owned subsidiary of The Coca-Cola Company (TCCC) based in Atlanta, USA. The Coca-Cola Company is the world’s largest beverage company, refreshing consumers with more than 500 sparkling and still brands. Led by Coca-Cola, the world’s most valuable brand, our Company’s portfolio features 16 billion dollar brands including Diet Coke, Fanta, Sprite, Coca-Cola Zero, vitaminwater, Powerade, Minute Maid, Simply, Georgia and Del Valle. Globally, we are the No. 1 provider of sparkling beverages, ready-to-drink coffees, and juices and juice drinks.

Through the world’s largest beverage distribution system, consumers in more than 200 countries enjoy our beverages at a rate of more than 1. 8 billion servings a day. With an enduring commitment to building sustainable communities, our Company is focused on initiatives that reduce our environmental footprint, support active, healthy living, create a safe, inclusive work environment for our associates, and enhance the economic development of the communities where we operate. Together with our bottling partners, we rank among the world’s top 10 private employers with more than 700, 000 system employees.

History

In April 1997, San Miguel Corporation’s domestic soft-drink bottling unit, Coca-Cola Bottlers Philippines, Inc., was merged into the Australia-based Coca-Cola Amatil Limited (CCA). In effect, San Miguel exchanged its 70 percent interest in a Philippine-only operation for a 25 percent stake in CCA, which had operations in 17 countries–both in the Asia-Pacific region and in Eastern Europe. CCA soon demerged the latter operations into a U. K.-based firm called Coca-Cola Beverages plc (resulting in a reduction of San Miguel’s stake in CCA to 22 percent). Seeking to maintain its focus on the Asia-Pacific region, San Miguel sold its stake in the new U. K. entity in mid-1998. In July 2001 San Miguel joined forces with the Coca-Cola Company (TCC) to reacquire Coca-Cola Bottlers Philippines, with San Miguel taking a 65 percent stake and Coca-Cola the remaining 35 percent. As part of the deal, San Miguel sold its shares in CCA back to that company.

Later in 2001, San Miguel sold its bottled water and juice businesses, now amalgamated as Philippine Beverage Partners, Inc., to Coca-Cola Bottlers Philippines. Finally, in February 2002, San Miguel completed the acquisition of an 83 percent stake in Cosmos Bottling Corporation in a P 15 billion ($282 million) deal completed through Coca-Cola Bottlers Philippines. Cosmos specialized in low-priced soft drinks and held the number two position in the Philippine market. The combination of Coca-Cola Bottlers Philippines and The Cosmos Bottling Corporation gave San Miguel control of more than 90 percent of the Philippine soft-drink industry. In February 2007, The Coca-Cola Company (TCCC) purchased San Miguel’s 65% shareholding in Coca-Cola Bottlers Philippines, Inc. (CCBPI) for $590 million acquiring the full ownership of Philippines bottler. CCBPI also owns Cosmos Bottling Company and Philippine Beverages Partners, Inc.

In September 2010, TCCC announced its plan to invest US$1 billion in its business in the Philippines over the next five years. Part of this investment is the completion of its newest and technologically advanced Mega Plant in Misamis Oriental in January 2012. In February 2012, Coca-Cola FEMSA, the largest public bottler of Coca-Cola products in the world, announces that it has entered into a 12 month exclusivity agreement with The Coca-Cola Company to evaluate the potential acquisition of a controlling ownership stake in the bottling operations owned by The Coca-Cola Company in the Philippines – the CCBPI. CEBU, Philippines – Coca-Cola Bottlers Philippines Inc., officially opened its expanded manufacturing plant in Mandaue City, as part of the company’s US$1 billion investment for the Philippine operations in the next few years. Coca-Cola Company executive vice president and president for the Bottling Investment Group Irial Finan, together with top executives from the Coca Cola Bottlers Philippines was in Cebu Monday, to grace the opening of the expanded plant.

The Coca Cola Cebu plant expansion, which the company opted not to disclose the capacity, is also seen to generate employment opportunities here. Currently, its Mandaue plant employs around 370 associates, doing partnership with roughly 40, 000 retailers. Coca Cola Bottlers Philippines, a wholly-owned subsidiary of The Coca Cola Company based Atlanta, USA, operations a total of 23 plans and 47 sales offices across the Philippines, with over 7, 000 employees.

The Philippines, was the first non-US nation to receive a Coca Cola bottling and distribution franchise. Today, the Philippines bottling operation is among the top ten biggest globally. Coca Cola Company, is the world’s largest beverage maker, with more than 500 sparkling and still brands. Along with Coca Cola (soft drink), the company’s portfolio of beverages include other 14 billion dollar brands, such as Diet Coke, Fanta, Sprite, Coca-Cola Zero, Vitaminwater, Powerade, Minute Maid, Simiple and Georgia. Through the world’s largest beverage distribution system, consumers in more than 200 countries enjoy the Company’s beverages at a rate of 1. 7 million servings a day. Uratex Philippines Inc.

Uratex Philippines inc. is today’s largest manufacturer of commercial and automotive polyuerethane foam products in the country. Through world-class manufacturing practices and a strong culture of excellence, Uratex Philippines inc. has become the most dominant player in the local foam industry and one of the leading foam-makers in Southeast Asia. Uratex Philippines inc. Is member of RGC Foam Group which is part of the RGC Group of Companies, one of the most progressive manufacturers in the Philippines today. The Group’s thriving foam business began in 1968 when Robert Cheng realized his dream of producing high-quality foam.

He founded Polyfoam Chemical Corporation and, later on, expanded into related businesses to address the growing needs of the automotive, furniture, bedding, footwear, garment, and food industries. Uratex Philippines inc. is located at Umapad, Mandaue City. RGC Foam Group today continues to be at the forefront of product innovation and technological advancement, investing in highly advanced machines and building state-of-the-art facilities that would help fulfill the increasing product and service demands of both local and international customers. Our Vision

To be the number one foam company in Southeast Asia in terms of customer satisfaction, quality, market share, technological advancement, and commitment to world-class excellence. We intend to attain this vision through teamwork, innovation, and total quality management. We intend to satisfy customers through quality products that are competitively priced, delivered on time, and developed through close coordination with our customers. In doing business, our goal is not just to develop products but to provide customers with the best, most sensible solutions. Our team works closely with our customers to understand and satisfy their specific product and service needs. We go the extra mile to meet and even surpass their expectations, from product development to delivery and after-sale service.

Cebu Mitsumi Inc.

Mitsumi, CMI, FCB, this is how employees of Cebu Mitsumi Inc. refer to this company. It is obviously the abbreviation of Cebu Mitsumi Inc. which is located at the Northeastern part of Cebu Island in the city of Danao. It is 33km from Cebu City, the provincial capital.

CMI is a Japanese electronic manufacturing firm that specializes in making connectors, wire harness, molded & stamped components, and optical pick-up units, and camera modules, chips on board, magnetic tape head, floppy disk drives, CD-ROM drives, digital audio tapes, and micro actuators. They also have plating and plastic molding businesses.

Mitsumi was founded last 1989 and started commercial operation in Cebu on 1990. And since then, FCB has steadily expanded the scale of its production. It is now one of Mitsumi Electric Co. Ltd.’s primary plants. MCI has been awarded with International Organization for Standardization ISO 9001: 2000 in compliance with Quality Management System. ISO 14001, ISO 13485: 2003 (known for quality medical products), TS 16949 (known for quality wire harness), OHSAS 18000 (known for zero accidents).

COMPANY’S VISION
A lifetime leader in the field of electronic peripherals manufacturing.

COMPANY’S MISSION
We are the world’s premier manufacturing center that provides superior quality, high value, innovative electronic peripherals premised on people empowerment, technological excellence, and highest degree of customer service and social responsibility.

Mitsumi activities
\* Manufacture and sale of electrical machinery|
\* Manufacture and sale of products for electronics industry applications, measurement equipment, optical equipment, medical and hygienic equipment| \* Manufacture and sale of metals industry products and metal materials| \* Manufacture and sale of ceramic productsProducts • ICs| • RF modulators, RF units| • Magnetic heads| • CS/BS converters|

• Camera modules| • Wireless modules|
• Coils| • Antennas|
• Stepping motors / DC motors| • Switching regulators|
• Game controllers| • AC adaptors / Car adaptors|
• Assemblies| • Chargers|
• Connectors| • Keyboards|
• Switches| • Mice|
• Polyvaricons| • Remote controllers|
|

ABS-CBN Broadcasting Corporation

ABS-CBN (Alto Broadcasting System – Chronide Broadcasting Network) is the largest broadcasting network in the Philippines. Its operation started on 1946, the company was originally incorporated by the Lindenberg Family as Bolinao electronic Corporation on June 13, 1946 and engaged in the local assembly of radio transmitting equipment. BEC landed an exclusive licensing agreement with radio Corporation of America to manufacture RCA equipment for export abroad. Inn 1948, the legislation of strict import controls restricted the availability of foreign parts, and as a result, BEC was prompted to undertake an alternative line of business, Radio Broadcasting.

On March 01, 1948, BEC inaugurated the DZBC Radio Station which transmitted over 1000 kilohertz. BEC actually operated a Nationwide Network of Radio Station and in September 1952, Change its corporate name to Alto Broadcasting System (ABS). A year, as ABS operates 50, 000 kilohertz transmitter and in the following month, channel 13, the first Filipino Television Station was established. On September 24, 1956, The Chronicle Broadcasting Network (CBN) which is owned by the Lopez family was organized and it acquired ABS a year later. CBN setup another Television Station Channel 9 during the same year. ABS-CBN Broadcasting Corporation was name on February 01, 1967.

In the same year, ABS-CBN Broadcasting Center was inaugurated to house what was then to colour Broadcasting facility in Asia. In 1972, the ABS-CBN Network consisted of severe radio to Television Station. But during Martial Law, it was shut down in the order of the president Ferdinand Marcos. It was discontinued when the government at that time took possession of the company’s studios and equipment.

It only resumed its operation at the end of Marcos regime. After more than 50 years of operation, its network has become vast. From its base in Metro Manila, now it has Regional Networks all over the country. These Regional Network included ABS-CBN Davao, Iloilo, Zamboanga and Laoag. It furthered its expansion by opening the Filipino Channel or subscribers abroad.

Salcon Power Corporation
History

In 1994, a consortium led by Salcon Philippines, Inc. won the bidding of the National Power Corporation’s (NPC) rehabilitation, operation, maintenance, and management (ROMM) contract for the Naga Power Plant Complex in Cebu. The year marked the birth of Salcon Power Corporation, or SPC, which was formed to fulfill our obligitions under the ROMM contract, and more importantly, a mission to provide Cebu with a sustainable source of power.

As a publicly listed Philippine corporation, SPC is authorized to primarily engaged in the design, construction, rehabilitation, operation, maintenance and management of power generation, supply and distribution of plants and related facilities. From 1994 to 1997, we have extensively upgraded and continuously maintained the facilities of the Naga Power Plant Complex. Armed with the primary business objective of increasing our involvement in power related projects in the Philippines, we have, since then, entered into joint ventures, acquired equity interest, signed technical services agreements, and have vied for similar government contracts.

Pant Equipment

Salcon is composed of 2 units thermal power plant. One, has a capacity of 50 MW and the other one is 56. 8 MW. It is a coal-fired using a pulverized combustion boiler which consumes 220 tons of coal per hour @ 535 degree-centigrade and using a 3600 rpm generator. Aside from those thermal power plants, it has also 6 units of diesel power plant and has a capacity of 6. 5 MW each. These diesel engines mainly used 2 kinds of oil for operation. Diesel fuel, which is being used upon starting up and shutting down of the engine, and the other one is the bunker oil that is being used instead of diesel every 10 minutes after start- up until 10 minutes before shutting down the diesel engine. SALCON is providing a quarterly preventive maintenance for their equipment.

Gardenia Bakeries Philippines

Gardenia’s roots go back to Singapore where, in 1978, it began as a humble in-store bakery. Increasing demand led to the opening of Gardenia’s first-commercial bakery at Pandan Loop in March 1983. Gardenia has since been the market leader in Singapore and has expanded its operations in Asia to countries such as Malaysia and Thailand with the latest in the Gardenia chain of bakeries here in the Philippines. It all begun in 1997, QAF Limited through Gardenia International Pte. Ltd. established Gardenia Bakeries Philippines Inc. and started construction of its bakery plant in Laguna International Industrial Park (LIIP), Biñan, Laguna. Gardenia Philippines started its operations in 1998 with the state-of-the-art bread factory rated as one of the most modern large scale bread manufacturing facility in the country.

Its major, highly-automated equipment come from the best bakery equipment suppliers from Germany, Holland, UK and USA making it the leading manufacturing company in the Philippines Over the years, Gardenia has gained wide acceptance and is now considered as the most widely distributed loaf brand, reaching many parts of the country. Gardenia Philippines offers a wide array of superior bakery products including white, wheat and health breads, flavored loaves, pandesal and snack items like snack cakes, muffins and toasts. Gardenia breads are known for their good taste, freshness, softness, oven-baked aroma and nutritive value. The popular Classic White Bread is cholesterol free and bromate free, has zero transfat, and is vitamin and mineral fortified, exceeding DOH recommendations. Its product slogan “ So good…you can even eat it on its own” best describes the product benefits. Gardenia, being a consumer-focused and branded food company, is singularly driven in delivering superior consumer value through providing consumers with superior products.

The Gardenia trademark means value and is respected all over Asia. Gardenia has been awarded with International Organization for Standardization ISO 9001: 2000 certifications from 2003 to 2009 and has now upgraded to ISO 9001: 2008 in compliance with Quality Management System and certification for product quality excellence. This assures that consumers only get the highest quality products in the market. Moreover, Gardenia is HACCP (Hazard Analysis and Critical Control Point) certified since 2003 to present—proof of the company’s adherence to the systematic approach in the identification, evaluation, and control of food safety standards.

From 2004-2010, Gardenia was accorded Superbrands status by Super brands Ltd., an independent authority and arbiter on branding. This, on the other hand, re-affirms that Gardenia has met the stringent criteria of market dominance, longevity, goodwill, customer loyalty and overall market acceptance. Another notable award is the Annual National Consumers’ Award (ANCA) as the “ Outstanding Bread Manufacturer” for five straight years The reason behind Gardenia’s success is no secret; it is the people who made Gardenia what it is today and the goal of sustaining Gardenia’s leadership and excellence. Our enthusiasm to serve constitutes the “ yeast that raises the dough” and with this, Gardenia will continue to take the lead.

Vision

Our vision is to become the premier company in the baking industry and the related food and beverage industry, known and emulated for our best quality products that delight the consumer. It is the pride of every employee, investor, trade partner and stakeholder.

Mission

Our mission is to serve consumers with the best quality assortment of great-tasting bakery and related food and beverage products, with world-class manufacturing facilities and an efficient nationwide distribution network, thereby providing a fair return on shareholder investments.

Core values

Food Safety Policy

We, at Gardenia Bakeries Philippines, are committed to assure customers and consumers that our products are produced with superior quality ingredients and according to strict safety and hygienic standards that comply with statutory and regulatory requirements.

Visayan Electric Company (VECO)

Visayan Electric Company (VECO) is the second largest Philippine power distribution utility serving the second largest city in the Philippines. The Franchise area of VECO covers Metropolitan Cebu (including municipalities of consolation, Liloan, Talisay, Minglanilla, Naga and San Fernando). In 2001, VECO had already 245, 103 customers, with the peak demand of 243 megawatts.

Electricity in Cebu is reliable

The visayan island group to which Cebu belongs has three main power baseloads which are interconnected into one grid with a capacity of over 2, 200 MW of Electricity. The main source is geothermal energy, supplemented by thermal diesel generating plants. These sources provide Cebu with predictable 220 volt AC electricity at stable prices.

The state-run National Power Corporation generates the electric requirement of the province, distributing it to three major electric firms: Visayan Electric Company (VECO), Mactan Electric Company (MECO), and Cebu Electric Cooperative (Cebeco).

Potable water is abundant in most areas, with on going infrastructure projects providing a significant increase in water supply to meet the growing needs of the industry. Water supply is provided by the Metropolitan Cebu Water District (MCWD), individually owned wells and independent water districts. MCWD services about 30 % of the province population.

Modern land lines with IDD, fiber optic data lines and Internet Services Providers are available in most areas. GSM Digital and Analog Cellular Networks provide coverage in the city and much of the province. International roaming supported. Cebu is the first province in the Philippines to have a complete telephone system. All of its five cities and 48 municipalities are provided with efficient and advanced telephone system. As of 1998, there were 323, 000 digital lines and non-digital line. At present, IDD networks reach all major cities in 116 countries on a 24-hour basis. The province has four basic telephone, six paging companies, five cellular phone companies, and Twenty Internet Services Provides. Cebu has wide range of media facilities. There are seven local television channels, Three Cable TV stations, 20 FM and 13 AM radio stations and variety of local, national and international newspaper.

East Asia Utilities
Prime Movers, 4 units
Type| 16V , 52/55 A Diesel Engine|
Manufacturer| Man B & W|
Manufactured| 1983 in Augsburg, Germany|
Serial Number| 1095030-33|
Bore and Stroke| 520 mm / 550mm|
Operation cycle| 4 Stroke, Single action|
Name Plate Rating| 12, 824 KW / Unit|
Speed| 450 rpm|
Mean Effective Pressure| 18. 3 Bar|
Mean Piston Speed| 8. 25 m/s|
Firing Pressure| 130 Bar|
Fuel Consumption for Diesel| 187 g / KWH|
For Heavy Fuel Oil| 227g / KW|
Turbo Charger Make| Man B & W|
Turbo Charger Type| NA 57|
Mode of Super Charging| Constant Pressure|

Fuel Treatment, 3 Units
Type| OSB 35-02-066 / 35|
Manufacturer| GEA West Falla|
Operation Mode| Single Phase Purifier|
Oil Type| HFO, IF 380|
Viscosity| Max. 380 CST/50°C|
Density| Up to 0. 94 g/ml/15°C|
Feed Temperature| Min. 35 °C|
Separating Temperature| 98°C|
Separating Capacity| Max. 5, 500 Liters/Hour|
Generators, 4 Units
Type| SAMB Brushless AC Generator|
Manufacturer| Ideal Electric Company|
Frame| M-10-42|
Serial Number| 931093-01-04|
Power Output| 12, 400 KW|
KVA Rating| 15, 500 KVA|
Voltage| 13, 800 Volts|
Speed| 450 rpm|
Current| 648 amperes|
Phase| 3, 6 Wires|
Frequency| 60 Hz|
Power factor| 0. 8|
Class| Continuous Duty|
Insulation| Class F|
Temperature Rise| 105 °C|

Lube Oil Treatment, 4 Units
Type| OSB 35-02-066 / 40|
Manufacturer| GEA West Falla|
Operation Mode| Single Phase Purifier|
Oil Type| HD-LO|
Viscosity| SAE 40, 110 CST /40 °C|
Density| Up to 0. 94 g/ml/15°C |
Feed Temperature| Min. 50 °C|
Separating Temperature| 95°C|
Separating Capacity| Max. 5, 400 liters / Hour|

Sea Water Cooling Pumps, 3 Units
Manufacturer| Bombas Ideal|
Pump Type| VG 187 / 2|
Serial Number| 208284 / 6|
Capacity| 1, 890 cu. m/hr|
Type of Liquid| Seawater|
Specific Gravity| 1. 02|
Head| 28 Meters|
Speed| 1, 750 rpm|
Motor Rating| 250 kW|
Voltage| 460 Volts|

Power Transformers, 2 Units
Type| SF-30000/ 69|
Manufacturer| Shanghai Transformer Works PROC|
Date Manufactured| 1993|
Method of Cooling| ONAF|
Rated Power| 30, 000KVA|
Rated Voltage| 69, 000 / 13, 800 Volts|
Rated Current| 251 / 255 Amperes|
Serial Number| 34001-1/2|
Impedance| 9. 99% / 10. 58% at 75 °C|
Service Condition| Outdoor Type|
Frequency| 60 HZ|
Phase| 3 Phase|
Connection | YND II|

Recommendation

The Batch 2013 of Bachelor of Science In Electrical Engineering students of University of Southeastern Philippines composed of 70 students along with Engr. Froilan Sison as adviser had their Edducational Field Trip last November 11-18, 2012 as a completion for the course requirement of the subject EE-57 Field Trips and Seminars. We had experience a great joy along the trip because we experience a lot of things. The said Field Trip was a success. The companies we visited gave us insights of their companies. We gained more additional knowledge through this kind of exposure.