Philippine Society of Mechanical Engineers
Western Region Saudi Arabia Jeddah Chapter

Volume 16, Issue 2
September 2021
www.psme-wrsa.com

Prime Movers

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NEWSLETTER TEAM

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2021 Mid-Year General Membership Virtual Conference

By Engr. Niño Jose A. Lopez

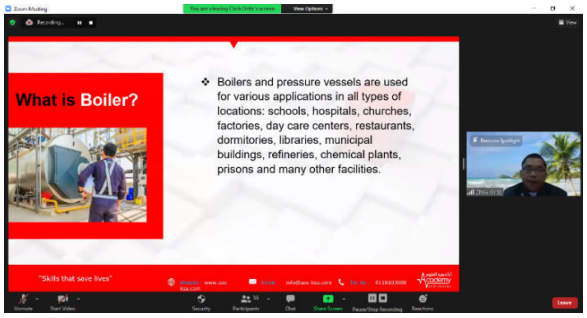
The 2021 Mid-Year General Membership Virtual Conference (MGMVC) was held last 25th June via Zoom. The event kicked-off at 9:00 AM (Saudi Time) with the Formal Opening by our Vice Pres. Internal Affairs cum Conference Chairman, Engr. Niño Jose A. Lopez followed by the Welcome Address by our Chapter President, Engr. Lee I. Bonifacio.

Inspirational Speech was delivered by our PSME National VP for Middle East, Rohenio L. Pangilinan, PME; which centered on determining our purpose in life as engineers. The Covid pandemic brought out opportunities for HVAC Design in improving air circulation, and this is also the challenge issued by VPME Rohenio.

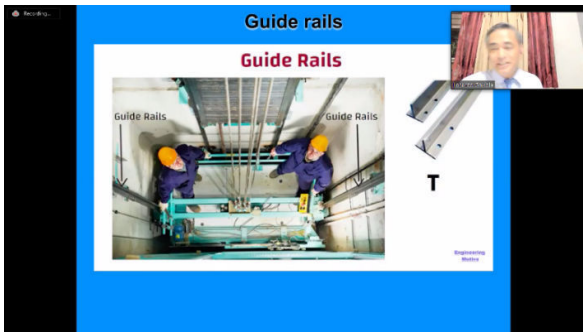
Keynote Speech was delivered by our National President, Jerry D. Asuncion, PME. Pres. Jerry discussed about the status of our AIPO Accreditation and CPD Application, Membership Database and benefits, and the releasing of the revised ME Book. He also made an announcement on the Posthumous Award for our late Chapter President, Noel S. Bitera, PME.

On our Webinars, the first topic was about Boiler Safety Procedure & Maintenance by our Past President Crisostomo C. Ortiz, PME. PP Chris discussed about the different parts and accessories of Boiler System. The comparison between Fire Tube and Water Tube Boilers together with the operation and safety procedures, and the risk involved in maintaining the Boiler Room. Just to confirm if the attendees understand the webinar; PP Chris ask questions and give away prizes to those who got it right.

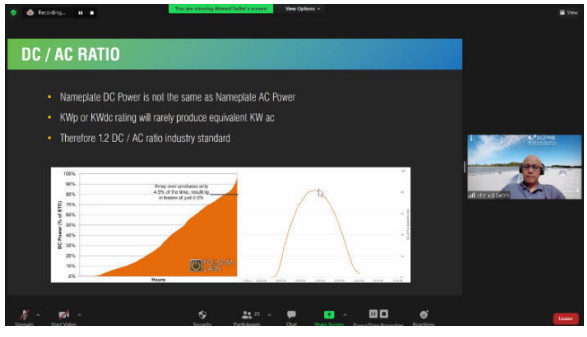
The second topic was about Passenger Elevator Design & Standards by our Deputy VP for External Affairs, Engr. Lorenzo O. Gaviola. Ka Loree presented a video of his former company showing a prototype elevator being subjected to different tests just to ensure the functionality and safety before introducing into the market. He meticulously dissected the various elevator components and safety features that left the attendees more convinced that the elevator is the safest ride of all. Ka Loree's humor-driven approach makes the subject more interesting.



Webinar#1: Boiler Safety Procedure by Engr. Crisostomo Ortiz

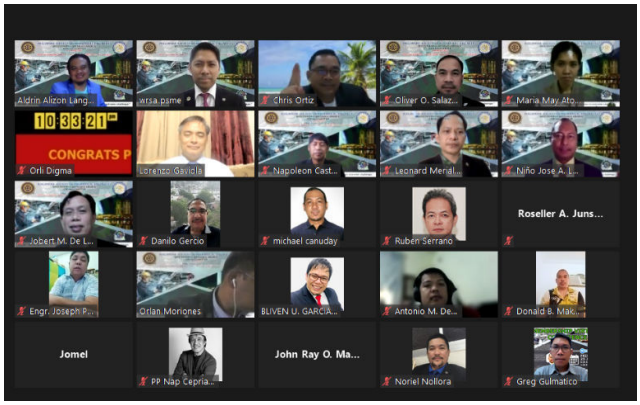


Webinar#2: Passenger Elevator Design by Engr. Lorenzo Gaviola

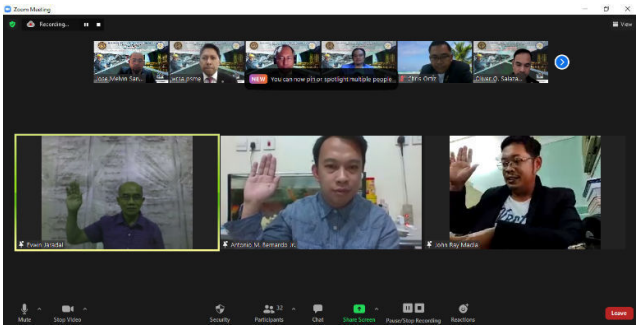


Webinar#3: Solar Photovoltaic Grid by Engr. Ahmed Selim

Continuation of 2021 Mid-Year …



General Membership Meeting presided by Chapter Pres. Lee Bonifacio



Induction of New Members by MD Engr. John Ray Madla

Closing Remarks of Conference Chairman Engr. Niño Jose Lopez

The last topic was about Solar Photovoltaic Grid Interactive Design by Engr. Ahmed L. Selim of Egphil. As electricity is the foundation of Solar Energy, Engr. Ahmed gave us a brief discussion about how electricity works with comparisons being made on piping size, pressure and volume; this makes us mechanical engineers understand the concept well. Then our speaker proceed with the discussion about Grid Connection and, Operational and Interconnection; he also enumerated the different accessories needed in setting up a solar panel kit. The highlights of the presentation is the Online Simulation using the Helioscope platform to calculate the Wattage generated in a particular panel installed in a sampled residential unit considering the obstructions presented like water tanks, trees, etc.

The second part of the program was the Plenary Session. The Guest of Honor was our Board of Mechanical Engineering (BME) Chair, Hon. Leandro A. Conti. Chairman Conti discussed about the issues revolving around PSME National which is the AIPO Accreditation and the status of the CPD Application. Engr. Conti also announced the planned Online Interview for Professional Mechanical Engineer(PME) and ASEAN Chartered Professional Engineer (ACPE) Applicants.

The report on RFID and Members' Database was presented by our Membership Director, Engr. John Ray O. Madla followed by the presentation of CPD Self Learning Direct Application by our Technical Affairs Director, Engr. Napoleon M. Castañeda, and The Jeddah Prime Movers Newsletter was presented by our VP External Affairs cum Editor-in-Chief, Engr. Jose Melvin D. Santos. We welcomed also our newly inducted members Engr. Antonio M. Bernardo, Jr. and Engr. Evwin D. Jaradal.

Upcoming Events of the Chapter for the remainder of the year were announced by our Public Relations Officer, Engr. Oliver O. Salazar.

The event was concluded by the Closing Remarks of our Conference Chairman, Engr. Niño Jose A. Lopez.

Immediate Past President (IPP), Engr. Aldrin Alizon D. Lango was the Moderator and the duo of IT Director, Engr. Bliven U. Garcia and VP External Affairs, Engr. Jose Melvin D. Santos were the Zoom Masters.

Many thanks to our generous Sponsors; Technical Industrial Automation and Engr. Jojie E. Cañezal for supporting our event; their deeds are profoundly appreciated.

Editor's Note

3rd Quarter Storm

By Engr. Jose Melvin D. Santos

Greetings. The 2nd issue of Prime Movers Newsletter this year contains the activities of PSME- WRSA JC at the mid of 2021:

Starting its cover page with the Mid Year General Membership Conference attended by guests from PRC-BME & PSME National. It was held virtually on June 25, 2021; The AER Conferment of new ASEAN Engineers where 10 of the 25 conferees came from this chapter who took their respective oaths before the PTC President. Event was held on July16 from 8am-12nn via Hybrid; In the afternoon of same day, PPO-WRSA distributed relief goods to the Bahay Kalinga - Philippine Consulate General Jeddah under its Community Outreach program, "We Support, We Care". It was a collective efforts from different professional organizations including PSME-WRSA JC; Another event with the PPO-WRSA was its Team Building with theme "Hitting the Heat of this Pandemic Heat" held last August 13 at Emerald Hotel, Jeddah; and Lastly, Refrigeration & Air-conditioning Hybrid Workshop held in Obhur, Jeddah on August 20, 2021. The event was also attended by ME Students form NVSU, Philippines.

The Technical sections are: "Wave Energy Development" authored by PP Nap Cepriaso; and the Technical Divisions of the PSME National presented by Engr. Nap Castañeda.

Indeed this 3rd Quarter was a more active and productive period as we were able to have some face to face activities. We hope to continue the same in our upcoming events

ASEAN Engineering Register Conferment

By Engr. Leonard P. Meriales

The much-awaited event for the twenty-five aspiring Filipino Engineers in Jeddah, Saudi Arabia, to level up their career has come to an end. They are now bestowed the title of ASEAN Engineer, Associate ASEAN Engineer and ASEAN Technician/Technologist.

The Philippine Technological Council - Middle East and North Africa Affairs (PTC-MENA) organized that momentous event and hosted by the collaborative forces of two engineering chapters based in Jeddah, the PSME-WRSA JC and IECEP-KSA-WRC. The event entitled 2021 ASEAN Engineering Register Conferment was held last Friday, July 16, at Emerald hotel in Jeddah and simultaneously on-line via zoom. It was a hybrid conferment, a combination of physical and virtual gatherings, where the conferees were physically present in the hotel (following the limited capacity as per Kingdom regulations on health protocols) while on the virtual platform were the conferring officer, guests and families of the conferees.

The program commenced at 8:00am with a prayer and Philippine national anthem. Then, Eng. Richard Garcia, one of the key speakers, graced up the event with a quote from Gandhi "The future depends on what you do today". He also welcomed all the dignitaries, officers and guest present in the gathering. Eng. Trese Bustamante delivered the opening speech addressing the benefits of becoming an ASEAN engineer.

National president of PSME, Eng. Jerry Asuncion and national president of IECEP, Dr. Mischell Lawas, delivered their respective message to the conferees and expressed their delightfulness on the progress of their chapter activities.

AER Head Commissioner Eng. Yau Chau Fong and PTC president Eng. Federico Monsada messages were addressed on the importance of career level up, the organizational brief history and the way forward of the organization.

Honorable Consul Mary Jennifer D. Dingal, Head of Post in Philippine Consulate Jeddah, as the guest speaker was present in the hotel and delivered her message on the significance of Filipino engineers abroad. She also remarked the importance of knowing the rich history of ASEAN as part of becoming an ASEAN engineer.

Charging of responsibility and oath of membership to the new ASEAN Engineers, Associate ASEAN Engineers and ASEAN Technologists were bestowed by Eng. Romulo Agatep and Eng. Federico Monsada respectively. Then, pinning of PTC pin, sash, awarding of medal and certificate, as the symbolic act of being a member to the ASEAN engineering registry were given by honorable Consul Mary Jennifer D. Dingal and Engr. Lee I. Bonifacio, *ASEAN Eng.* (incumbent PSME-WRSA Jeddah Chapter president).

Acceptance speech were delivered by Eng. Alizon Lango and Eng. Lambert Reyes, both were past chapter president of PSME-WRSA-JC and IECEP-KSA-WRC respectively.

The event was concluded at 11:30am (Saudi time) with a closing remark from Eng. Husni Hamsijani, 2020 IECEP-KSA-WRC Governor.

Oath Taking with PTC President Fred Monsada

Pinning of PTC Pin & Sash and Awarding of Medal & Certificate

Continuation of ASEAN Conferment …

Ten (10) of the conferred ASEAN engineers were mechanical engineers guided by PSME-WRSA Jeddah Chapter. Namely:

1. Napoleon M. Cepriaso, PME, *ASEAN Eng.*
2. Crisostomo C. Ortiz, PME, *ASEAN Eng.*
3. Aldrin Alizon D. Lango, RMEE, *ASEAN Eng.*
4. Jose Melvin D. Santos, RMEE, *ASEAN Eng.*
5. Maria May M. Atole, RMEE, RMP, *ASEAN Eng.*
6. Leonard P. Meriales, RMEE, *ASEAN Eng.*
7. Oliver O. Salazar, RMEE, *ASEAN Eng.*
8. John Ray O. Madla, RMEE, *ASEAN Eng.*
9. Orlan C. Moriones, RMEE, *ASEAN Eng.*
10. Antonio Elmer L. Quintilla, *ASEAN Eng.*

Again, another milestone was added to PSME-WRSA JC rich history as it successfully leads its ten members in advancing their career. Indeed, a beacon to its general membership. Kudos! PSME-WRSA Jeddah Chapter.

Conferred ASEAN Engineers & Technologists from PSME-WRSA JC & IECEPS-KSA-WRC

President's Message

By Engr. Lee I. Bonifacio

Greetings!

I've been really excited with the activities that were happening these past few months. I'm grateful for the successful activities that we have done despite the difficulties of this pandemic. Our Mid-Year General Membership Virtual Conference lasted three technical webinars attended by the most honorable and distinguished guests from the Philippines. We were able to co-host the virtual conferment of ASEAN engineers and technologists with our brothers and sisters from IECEP-KSA-WRC.

We also have been able to conduct a hybrid workshop in refrigeration and air-conditioning which was attended virtually by the graduating class of mechanical engineering students from Nueva Vizcaya State University.

As per the old saying, "If there is a will, there is a way." If the will to serve of the current Board of Directors and the will to participate and learn of the members excel and surpass the challenges that is happening around the world, then there must be a way in order for us to do what we need and want to do.

To conclude, we need to hold onto that will and don't let go. Let us strive to conquer these challenges and never give up when serving the general membership. Let's keep in mind that these chapter activities are for our personal and professional development.

WAVE ENERGY DEVELOPMENT – CHALLENGES AND UPDATE

By Engr. Napoleon M. Cepriaso

Introduction

In the first article entitled "*Wave Energy in Brief*" of Jeddah PrimeMovers Issue 1 of 2021, we learned how wave energy work, its benefits and potential globally. The Philippines facing the vast Pacific Ocean on its East Coast has an enormous potential for this technology given the initiative and support from the government for investors to participate.

Being the largest known untapped resource of sustainable energy supply, tapping this resource turned out to be a big challenge. As with other energy sources, wave energy has environmental implications which must be considered when planning and designing a new installation.

Common Environmental Impacts of Wave Energy

1. Onshore and near-shore schemes may influence coastal erosion due to alteration of currents and waves.
2. Possible impact during installation from anchoring these devices. Many wave energy devices are secured to the ocean floor using pilings, concrete blocks, anchors, chains, and dredging of the seabed to install electrical cables.
3. Potential impacts associated with the release and leakage of hydraulic fluids for hydraulic rams, power trains, lubricating oils and fluids, anti-corrosion and biofouling paints and coatings into the surrounding seas.
4. Exclusion zones around offshore devices could impact on local fishing areas.
5. Marine mammals may be vulnerable to the floating structures, or they may act as barriers to marine movement and migration affecting the fauna and flora on the seabed.
6. Possible navigational hazards to shipping as their low profile could result in being difficult to detect visually or by ship's radar. Also, if wave energy devices are not illuminated at night or if their moorings break away during storms.
7. The constant noise from wave capture devices especially in rough conditions may have an impact on whales and dolphins that use echo location to hunt. For shoreline and nearshore devices, the levels of operational noise may constitute a noise nuisance locally on the beach or shoreline.
8. Offshore and nearshore devices could influence some forms of recreational swimming and water sports around the floating devices. Also, visual impact of large-scale installations on tourism as the water depth required by nearshore devices might only be a few hundred meters offshore.
9. The placement of onshore and nearshore wave energy installations such as device platforms, anchors, and cables could change the flow of the water and sands immediately around the structures. Slower or restricted water currents will increase sediment deposit.

Challenges in Wave Energy

Currently, the ocean energy sector (both tidal and wave) is on a slow pace towards commercialization. Market expectations have been downscaled as some developers have been over-ambitious. Some concerns were raised regarding the large number of projects and devices under development. Lack of clarity regarding causes behind its development is foreseen, such as: a) technical reliability of devices and components; b) huge challenges in installation, operation, and maintenance; c) limited investor confidence; d) eroding policy support to renewable energy, in general, and ocean energy technology, in particular; and e) cooperation within the sector due to intellectual property protection of each technology.

The following table shows some tested and prototyped technologies as of 2014 (*Source: Europe's Joint Research Centre.*):

Converter Principle	Device Name	PTO Concept	Status *(with update after 2014 below)*
Attenuator	Pelamis	Hydraulic circuit driving rotating electrical generator	Project cancelled
Point absorber	Wavebob	Hydraulic circuit driving linear electrical generator	Project cancelled
	Seabased WEC	Direct driven linear electrical generator	Ongoing development, first commercial project[1]
Oscillating wave converter (OWC)	Corres OE-Buoy	Airflow thru a Wells or Impulse turbine driving a rotational electrical generator	Ongoing prototype development[2]
Overtopping	Wave Dragon	Water level difference drives low-head hydraulic turbine driving a rotational electrical generator	Project cancelled
Rotating mass	Wello's Penguin	Rotating mass drives rotating electrical generator	H2020 field test (CEFOW) – clean energy from ocean waves[3]
Wave surge	Oyster	Hydraulic circuit connecting all units in an array and driving a land-based common rotating electrical generator	Project cancelled
	WaveRoller	Individual hydraulic circuit in each device, hermetically isolated from sea, driving a rotating electrical generator	Part of EU Horizon 2020. Prototype installation was successful[4]

[1]UPDATE 2019: Despite tests and funding from Swedish government, the project was closed in 2019.
[2]UPDATE 2011: After 8 months of sea trial in 2007 & 2008, the project was ended in 2011.
[3]UPDATE 2020: Field test was cancelled in November rescheduled for early 2021. No update till now.
[4]UPDATE 2019: The first full-scale is set to be installed in Portugal. Results are not available.

Cont… Wave Energy Development

To date, the development of wave energy technology shows very little technological convergence. Due to the diverse nature of the wave resource in deep water and shallow water as well as the complexity of extracting energy from waves, there has been a wide range of technical solutions under development focusing on different parts of the resource and using a range of different solutions. The evolution of wave energy technology is rather fragmented. Indications of collaboration, sharing of experience and knowledge are less obvious.

Technological Barriers

While technological innovation and development is ongoing, some stakeholders comment that the industry has over-promised and under-delivered from the technical and performance point of view. The methods and metrics currently applied to due diligence and evaluation of technologies should be improved. In wave energy, due diligence and more realistic evaluation together with a wider collaboration across various technologies and projects is expected to support future development.

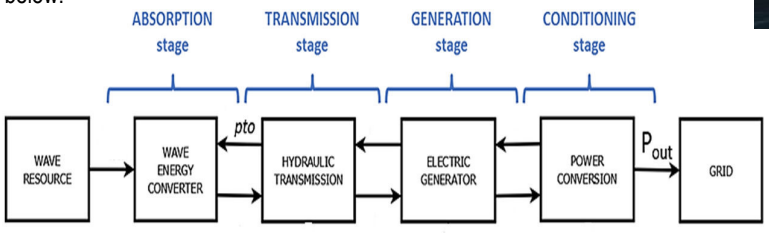
The main generic concerns of the technological barriers currently addressed by the stakeholders are: 1) reliability of the devices, 2) high cost of offshore deployment, operation, and maintenance of installations, and 3) lack of tailored grid connection components (cables, connectors, substations) and methods (cable laying and connection).

Update of Some Technologies

Despite failures of various wave energy projects mentioned earlier, newer ideas from lessons learned on the failures are emerging. The following list of technologies in wave energy are still subject to further studies of their prototype and pilot project. Their website could be visited for further details.

- Wave Dragon, http://www.wavedragon.net/
- Power Buoy, https://oceanpowertechnologies.com/
- Archimedes Wave Swing, http://www.awsocean.com/
- Sea Power WES, http://www.seapower.ie/
- CorPower WEC, https://www.corpowerocean.com/
- Bombora Wave Power, https://www.bomborawave.com/
- WaveRoller, https://aw-energy.com/
- Aquanet Power, https://www.aquanetpower.com/
- Arrecife Energy Systems, https://www.arrecifesystems.com/
- WaveStar Energy, http://wavestarenergy.com/
- Eco Wave Power, https://www.ecowavepower.com/
- Eco Green Resources, http://ecogreenres.com/

The last three technologies have similar system and discussed below.



The WaveStar

The *Wavestar* machine draws energy from waves with floats that rise and fall with the up and down motion of the waves. The floats are attached by arms to a platform that stands on legs secured to the sea floor. The motion of the floats is transferred via hydraulics then converted into the rotation of a generator, thus producing electricity. Waves run the length of the machine, lifting 20 floats in turn. Powering the motor and generator in this way enables continuous energy production and a smooth output. It is one of the few ways to convert fluctuating wave motion into a high-speed rotation to generate electricity.

Energy production with wave energy is more predictable than wind because waves come and go slowly and can be forecasted 24 hours ahead. The *Wavestar* machine could also be installed together with a wind turbine which would further increase efficiency and reduce set-up costs. Test performance of the current pilot plant can be found in this link

http://wavestarenergy.com/sites/default/files/EWTEC2011_2011-09-06.pdf.

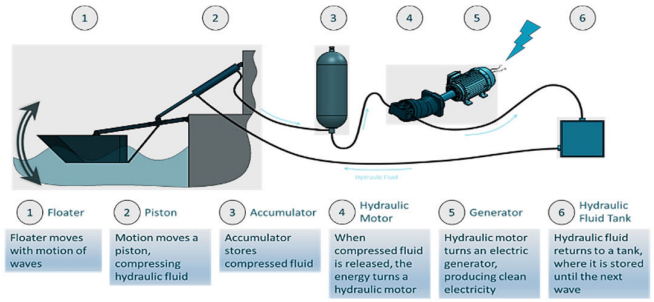
Cont… Wave Energy Development

Eco Wave Power

Unlike the *WaveStar* which need to build a structure for its system, *Eco Wave Power* utilizes existing structures such as breakwaters, piers, or jetties. The technology is highly reliable as most of the system's electrical generating units are located inland and only the floater mechanisms are in the water. The power converter unit is not subject to aggressive marine environment.

The floaters draw energy from waves by converting the rise and fall motion of the waves. The movement of the floaters compresses and decompresses hydraulic pistons which transmit hydraulic fluid into accumulators inland. Pressure is being built in the accumulators. This pressure rotates a hydraulic motor, which rotates the generator, and electricity is generated and transferred into the grid via an inverter.

After decompression, the fluid flows back into the hydraulic tank where it is then re-used, thus creating a closed circular system. The system can produce electricity from wave heights of 0.5 meter and the operation is controlled and monitored by a smart automation system. When the waves are too high in case of storm, the floaters automatically rise above the water level and stay in the upward position. The floaters return to operation mode after a storm has passed.



Eco Wave Power operates an off-grid pilot power station since 2014 in Jaffa Port, Israel and has been producing electricity for testing and study. In the same year, they signed a 5-MW PPA with the Government of Gibraltar and the Gibraltar Electricity Authority. In May 2016, the newly constructed wave energy power station on Gibraltar was officially opened in a former World War II Ammunition Jetty (initial 100kW of a 5-MW power station). The Gibraltar project is the first grid-connected wave energy project and a significant step towards its commercialization.

Eco Green Resources

Eco Green Resources wave energy technology is on the pilot stage. A prototype is scheduled to be launch in Jeddah, Saudi Arabia in partnership with our company (under negotiation). Their technology is new and has considered most of the lessons learned from failed projects earlier. Due to NDA (non-disclosure agreement) signed with our company, disclosure of technology and photos are not allowed (for intellectual property protection) at this time. A brief idea of its operation in general is described below.

The technology of energy generation and energy storage is based on hydraulic circuit (hydraulic pumps, hydro-accumulators, and hydro-generators). The principle of operation is like *Eco Wave Power*, except on the wave energy converter (WEC) unit. Floats convert the heaving motion of the waves and transmit energy to the hydraulic pump which then pumps liquid to the hydro-accumulators for storage. The stored energy in the form of pressured air and liquid can be kept for long period (like gas in gas cylinders). The energy storage system works independently of the operation of the generators both when the generators are on and off. The power generation system can operate on the accumulated energy from the hydro-accumulators both during the operation of the storage system and when it is stopped.

Generation of electricity is started by opening the valves in the hydro-accumulator and drives the hydro-generator, which comes in cluster. When the voltage in the network drops due to increase in demand, new hydro-generators in the cluster are switched on to restore the voltage parameters immediately. When the demand decrease, some hydro-generators are turned off accordingly. The process is automated and controlled by an industrial computer making fast on/off switching of generators possible.

Update on new wave energy technology was not noted at this time with the exception of NREL's DEEC-Tec concept, https://www.nrel.gov/news/program/2021/how-wave-energy-could-go-big-by-getting-smaller.html. Recent update on ocean energy technology (both tidal and wave) showed that some are gaining popularity in many countries. Here are some links to read: https://unfccc.int/blog/wave-of-the-future; https://www.nsenergybusiness.com/features/marine-energy-projects-2021/.

Sources: The Open University, company websites and other websites

About the author:
Napoleon M. Cepriaso is a Professional Mechanical Engineer , ASEAN Engineer and Fellow Awardee of the Philippine Society of Mechanical Engineers (PSME), and a 2-time TOME Awardee. He is currently the Senior Projects Manager of EgPhil Solar and Renewable Energy Solutions, Jeddah, Saudi Arabia.

PPO-WRSA Community Service

By Engr. Aldrin Alizon D. Lango

The "We Support & We Care Project" of the PPO-WRSA was derived from the Filipino Culture "Bayanihan". Bayanihan is doing the task together as one community making the work load lesser and getting the job done easier. The PPO-WRSA through its Outreach Program replicates the Bayanihan Spirit by providing assistance to our fellow Filipinos who are affected by the pandemic and other atrocities. Outreach Program or Community Service has always been a part of the PPO-WRSA Annual Activities.

The emergence of Covid-19 created uncertainties in the lives of individuals, displaced workers from their workplaces, thereby increasing the number of Filipino OFWs in distress. During a meeting with the representative from POLO, he stressed that the most affected are the women and children who are under the care of the PCGJ Bahay Kalinga. The PPO-WRSA took the initiative to reach out to our fellow Filipinos affected by the pandemic and other atrocities to somehow lessen the burden by providing them with basic necessities such as foods, toiletries, hygiene kits, face masks and other food and non-food items, multi-vitamins and some basic medicines.

Being a non-profit organization, PPO-WRSA is often faced with the issue on scarcity of resources. Thus, the spirit of "Bayanihan" was then adopted as an approach to gather the essential goods for the target beneficiaries. Right after the creation of the Committee on Community Service last March 12, 2021 during the 2nd Regular Meeting of PPO-WRSA, Bayanihan Boxes were then distributed by the PPO-WRSA President Ms. Veronical Royol Bolinao to some known Filipino accommodations within the City of Jeddah so that our Kababayans can extend their humble support. These bayanihan boxes were then visited every week until the day of the Outreach Program.

In the morning of July 16, 2021, the day scheduled for the Outreach Program, all collected goods were divided and packed accordingly for the 300 individual target beneficiaries. At 1400hrs (2:00PM) of the same day all gift packs were distributed to the beneficiaries. Different facial expressions of gratitude can be traced from each individual receiving their gift packs. Some came with bursting excitement, others vocally extended their message of thanks, and there were individuals who seemed to be out of words but their humble faces with teary eyes and smiles were enough to convey their message saying thank you for remembering us!

Prior to the said date of Outreach Program a letter of request has been sent to the office of the Acting Head of Post Consul Maria Jennifer D. Dingal for approval. The goods were distributed in accordance with the guidelines provided by the Philippine Consulate General in Jeddah (PCGJ) and with proper observation of health protocols prescribed by the government of Saudi Arabia.

The success of the Outreach program would have not been possible without the benevolence of the PPO-WRSAs' 14 Member Organizations namely PICE-WRSA, IIEE-WRCSA, PICPA-WRSA, UAP-KSA WRC, PNA-J, PSME-JC, IECEP-KSA-WRC, PSME-WRSA JC, PSART-WRC, FDK-WR, ARCPP-KSA, IIEE-NWRCSA, PSME-Y&R, and PISTA.

PPO-WRSA Team Building 2021

By Engr. Jose Melvin D. Santos

Last August 13, 2021, PPO-WRSA conducted its Team Building Activity with its theme "Hitting the Beat of this Pandemic Heat" at Emerald Hotel, Jeddah.

The Philippine Professional Organization – Western Region Saudi Arabia is composed of 14 Member Organizations namely: PSME-WRSA JC; PICE-WRSA; IIEE-WRCSA; PICPA-WRSA; UAP-KSA WRC; PNA-J; PSME-JC; IECEP-KSA-WRC; PSART-WRC; FDK-WR; ARCPP-KSA; IIEE-NWRCSA; PSME-Y&R; and PISTA.

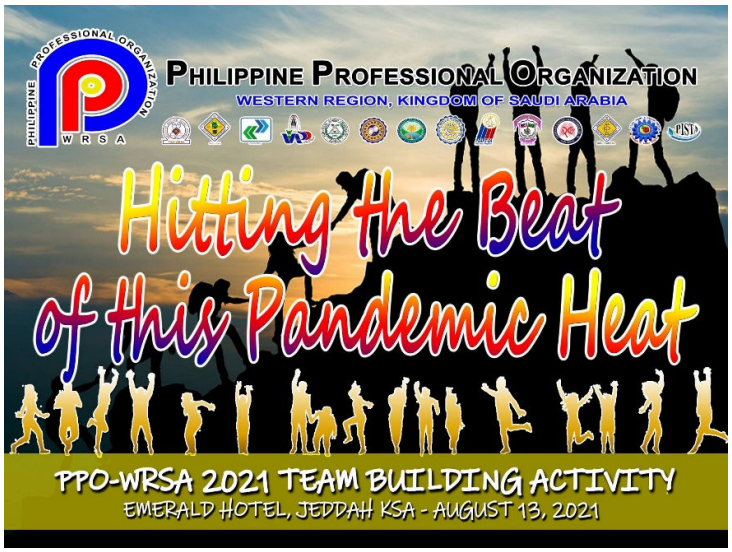
The Team Building Committee, headed by its Chairwoman Dra. Menchie Malana, planned the activity. Tasks were divided among the members of the committee in searching for the venue, preparing the program of activities, soliciting raffle prizes, preparing the venue, etc.

The event started with the welcome address of PPO-WRSA President Ms. Veronica Bolinao followed by the "Getting to know" pick-up lines by each members. The members were divided into 4 groups that were identified by the color of their head bands, Yellow, Orange, Green & Blue. There were 3 parlor games & 3 Collaborative games competed by the 4 groups. As part of the team building committee, I was tasked to be the game master of one of the parlor games "Pass the Rope" and one of the Collaborative Games "Longest Line".

Aside from the fun and games. There were many revelations of talents from the PPO-WRSA members. Our IPP Aldrin Alizon Lango performed an intermission song number while playing his guitar. During our lunch, we were serenaded with karaoke singing by some of the Gentlemen. The room turned into a Ballroom when the Poquiz spouses showed their moves and a Flash Mob when the FDK Ladies started dancing with the beat.

The Team Building Activity gave us a breather from our respective works. We were able to socialize, team up, collaborate and celebrate with other professionals in the organization. Definitely an event to cherish and to expect in the coming years to come.

Congratulations to PPO-WRSA and more power!



2ND Technical Webinar on Refrigeration & Air-Conditioning Workshop

By Engr. Napoleon M. Castañeda

Our 2nd Technical Webinar was held in Crave Obhur, Jeddah, Kingdom of Saudi Arabia last August 20, 2021 entitled "REFRIGERATION AND AIR CONDITIONING WORKSHOP" thru HYBRID PLATFORM, where attendees were simultaneously present in physical and thru video conferencing. Twelve (12) attended physically while forty four (44) attended virtually via zoom.

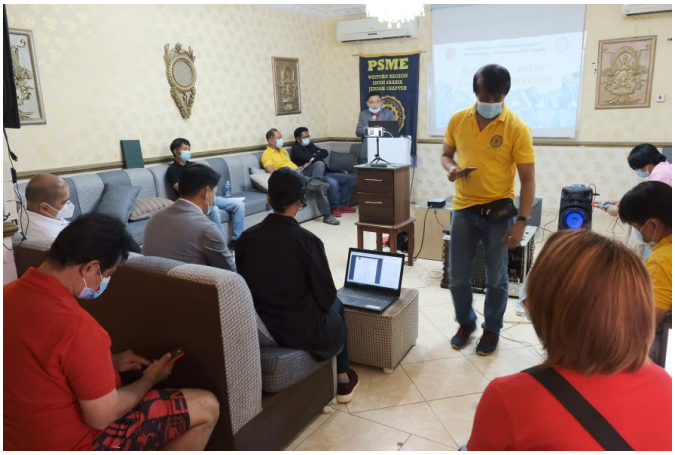
A part of the Technical Webinar was the inspirational message from the Guest Speaker, none other than one of our Past Presidents Engr. Crisostomo C. Ortiz, PME, *ASEAN Eng*. He spoke about how to become a better Speaker or good Technical Presenter.

He introduced these eleven (11) tips to enhance us to be better Speaker or good Technical Presenter.

1. To know the room or place.
2. Know your audience.
3. Know your materials.
4. Release tensions by doing exercise. Stress your arms, practice deep breathing.
5. Visualize yourself as successful, so you will be more successful.
6. Realize the people you want to succeed is your audience.
7. Don't mention any nervousness or don't apologize any problem in your presentation or speech.
8. Concentrate on the message or the learning.
9. Turn nervousness into positive energy, then transform into enthusiasm or vitality.
10. Use vocal variety like pitch, volume and rate of your voice.
11. Gain experience means confidence which is the key to be effective Speaker.

Aside from the TIPS, he encouraged us to attend ToastMaster International especially those who wants to upgrade their profession.

On the Webinar proper, a workshop was conducted by John Ray Madla, RMEE, *ASEAN Eng*. who is presently working as HVAC Supervisor at King Fahad Armed Forces hospital, Jeddah Kingdom of Saudi Arabia. He has vast experience in HVAC Operation & Maintenance both in Overseas and in the Philippines. He is also the current Membership Director of PSME-WRSA JC.



The Technical Presentation Outline were the following:

1.0 Principles of Air-Conditioning
2.0 Safety Handling of Refrigerant
3.0 Live Repair and Troubleshooting of Air-Conditioning unit
4.0 Preventive Maintenance of Air-Conditioning unit.

As the Technical Presentation Outline were discussed, we have learned about the principles of Air-Conditioning and its Refrigeration cycle application. The chart for design Temperature – Pressure equivalent allowed to the system as the basis of recharging its refrigerant during maintenance.

The Safety Handling of Refrigerant which is necessary in the field of Air-Conditioning, from recovery of refrigerant to a certain cylinder in order not to release in the atmosphere due to environmental concern during repair and the storage of large volume of refrigerant in well ventilated warehouse to keep them safe.

Basic tools used in repairing Air-Conditioning unit were shown during the LIVE repair and troubleshooting. A 1.2 TOR (4100 Watts) Window type

Cont… 2nd Technical Webinar

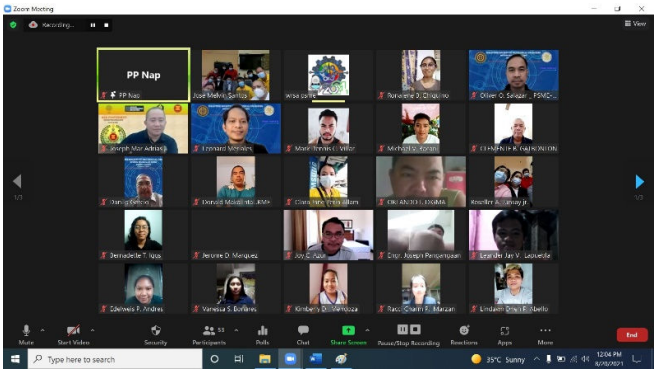
A/C was an actual sample to demonstrate how to repair and troubleshoot the unit. Checking the thermostat, capacitor and Lock Rotor Amps (LRA) of the compressor was one of the examples shown during this portion.

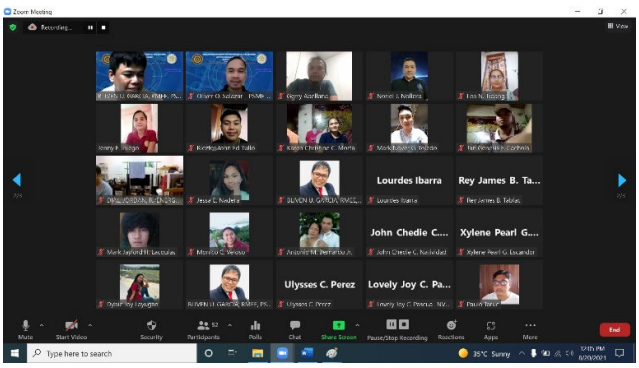
The Preventive Maintenance (PM) gave us ideas and knowledge how to maintain our Air-Conditioners in order to keep them running in good condition and to prevent unnecessary breakdown. Maintenance Checklist is needed to look over in every part of the system.

Special thanks to the delegates from Nueva Vizcaya State University (NVSU) – Mechanical Engineering Students headed by Engr. Larry Remulazo, Head of Mechanical Engineering Department and currently the VP Internal Affairs of PSME Nueva Vizcaya Chapter for participating in this 2nd Technical Webinar via HYBRID Platform.

Thank you PSME-WRSA JC Officers, Board of Directors, Council of Past Presidents and Members for the unending support you have provided. To our Guest and Technical speakers who were with us to share their technical ideas and know-how.

"MORE POWER PSME-WRSA JC"





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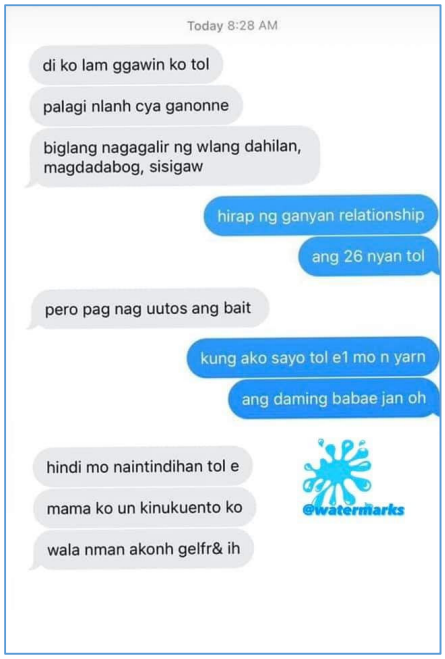

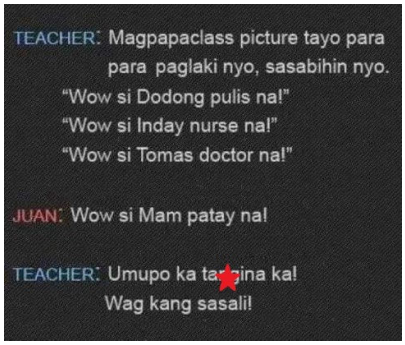

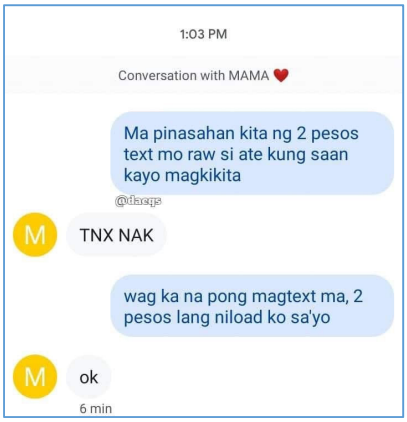

"Credit to the Owners"

KNOW ABOUT PSME TECHNICAL DIVISIONS:

By Engr. Napoleon Castañeda

What are Technical Divisions (TD)?

- are groupings of PSME member according to their field of practice or interest.
- have the same degree of freedom similar to a Chapter but national in scope and operation.
- the main difference of the Technical Division (TD) compared to the Chapter is that the TD has no political role in the election of the National Board of Directors. Its function is purely technical matters.
- are responsible on the technical advancement of their members by conducting seminars, and by giving opportunities for their members to meet and learn from each other.

Goal as Technical Divisions:

- One of their goals is to make beginners into experts.

Purpose:

1. Promote the mechanical engineering Profession.
2. Implement a strategic educational program with the objective of increasing the number of experts in its field.
3. Create and Operate Continuing Professional Development Seminars.
4. Create, maintain and operate a Skills Certification Program.
5. Create and maintain codes and standards.
6. Publish newsletters, journals and other technical papers, maintain website and social media accounts.
7. Organize technical conferences.
8. Nominate candidates for fellow and other awards.
9. Assist in the evaluation of Nominees to various PSME awards.
10. As directed by the National Board, formulate the PSME Position on various public issues.
11. Conduct projects and campaign promoting technical innovations.
12. Protect the Filipino Mechanical Engineers and Entrepreneurs' interest.
13. Represent PSME in various government committees.
14. Initiate or recommend changes in government standards, codes, guidelines, policies and laws.
15. Other projects or programs that support TD mission.
16. Create programs beneficial to students of mechanical engineering.
17. Maintain a bank account and disburse funds in accordance with Society's accounting principle and procedures.
18. Assist in the organization and conduct of the National Convention and Regional Conferences.

	TECHNICAL DIVISIONS	LOGO
1	Automation, Instrumentation and Robotics	
2.	Automotive Engineering	
3.	Boiler, Pressure Vessel and Piping	
4.	Energy Management	
5.	Environmental Engineering	
6.	Fire Protection	
7.	Mechanical Ventilation & Air Conditioning - Refrigeration	
8.	Mechanical Design and Fabrication	
9.	Mechanical Engineering Education	
10.	Manufacturing Engineering	
11.	Plant Engineering and Maintenance	
12.	Power and Energy	
13.	Project Management	
14.	Safety Engineering and Health	
15.	Welding Engineering and Management	

HOW TO ACCESS THE PSME TECHNICAL DIVISION?

1. Go to https://psme.org.ph/members/group_select.asp?type=17576
2. Click *Register* on the upper right corner.
3. Select your member type and continue.
4. Create username for your account, enter your First name, Last name, Chapter and continue. (Registration information)
5. Fill in Membership Information (Step 2) and submit.