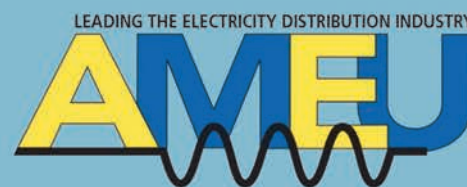




# AMEU NEWS

THE ASSOCIATION OF MUNICIPAL  
ELECTRICITY UTILITIES OF SOUTHERN AFRICA



## PRESIDENT'S MESSAGE

AMEU President Refilwe Mokgosi writes;

"The well known expression "This too shall pass" has been used in many situations and by many people since it was first recorded by a wise man living in Ancient Persia (modern day Iran) thousands of years ago. With the year 2021 now well and truly under way, my hope is that its positive message will inspire you to maintain a steady course of high integrity in the execution of your daily duties in these extremely difficult times, and to be the reference standard which all your colleagues look up to.

Electricity is the lifeblood of our society and I appeal to you to do everything possible to ensure that it is available both to the essential services in our individual communities which are now taking such enormous strain, and to our every-day customers whose dependence on it is greater than ever before.

Most of us have been able to adjust our Departmental work-processes in ways that meet the requirements of the many new laws and regulations necessary under the pandemic, while at the same time applying them to the practical conditions under which we have to work to keep our networks both healthy and operational. The "new norm" of working is likely to be with us for some time to come; even after the pandemic has faded in our memories, many of the processes and procedures that have been developed will likely remain in use in one form or another for many years to come.

Importantly, the AMEU now has various operational platforms in place that can assist our members with advice and information as and when required. Our technical and other committees are alive and well and studying, debating and acting on matters as they arise, as is necessary and appropriate.

Our Secretariat and Strategic Adviser are monitoring and acting on national issues from time to time, and our interaction with important National bodies like SALGA, NERSA, ESKOM, and others is ongoing, with the Executive continuing to give inputs on developing issues as and when required. I thank them all for their efforts.

Two particular very concerning problems are associated with Eskom's load shedding needs and the matters associated with the municipalities that are so deeply in debt with the national supplier. These are being monitored and acted upon as and when appropriate.

As an Association the AMEU has adapted operational needs to meet the new way of holding both our Committee meetings and those gatherings supplying our broader training, education and information-transfer programs and activities. While there are sometimes areas of breakdown resulting from connectivity and other technical issues, these are being minimised and overcome and our virtual meetings are without doubt steadily improving in quality.

Not surprisingly, given the large savings in costs and travel times, our Branch meetings are attracting wider attendances and I was pleased to note that one of our most recent, that of the Limpopo Branch, had well over 60 delegate. This is very encouraging and my thanks and congratulations go to the local committees, their leaders and all who work tirelessly behind the scenes to make these possible.

At the time of writing our flagship Annual Convention is being planned as a face-to-face meeting to be held in Durban in October 2021 but we appreciate that in this uncertain environment, circumstances may require us to review this decision. Our members will be kept up to date at all times.

This letter ends on a very sad note. I wish to record my sincere sympathy and very deep sadness to all the families and friends who have lost loved ones during this period. Please be comforted to know that we, the members of this Association, are all saddened by these tragic events and offer you our moral and practical support in your bereavements.

Keep well,  
Sincerely,

*Refilwe Mokgosi*



# BRANCH MEETINGS

Note that as all meetings – except Namibia - are now virtual, all members are invited to attend as many Branch meetings as is possible for them, dependant only on their diaries and local commitments and other practical considerations.

## 2021 CALENDAR OF BRANCH MEETINGS

Limpopo .....	21 January
Namibia .....	17-19 March
Mpumalanga .....	18 March
Central .....	6 May
Highveld .....	8 July
Good Hope.....	9 September
KZN .....	4 November
Eastern Cape.....	2 December

## Summary of the proceedings of the Limpopo branch

The first Branch meeting of the year was hosted by the Limpopo Branch of the AMEU and was held virtually on 21<sup>st</sup> January 2021.

Some 65 delegates attended and after a welcome by Chairman Dennis Mokoala of Polokwane and the completion of the general business, Affiliates Chairman Gordon Arons gave a brief review of Affiliates activities. He made the point that their committee is planning details for the 2021 Durban Convention as if it would take place as a face-to-face meeting. These will change to suit if the AMEU Exco decides that an alternative form of meeting will take place.

A presentation on “Responding to Covid” was given by Megan Euston-Brown of Sustainable Energy Africa. It was supported by submissions by Johan Durie of Mogale City and Bheki Tshawe of Tzaneen. The presentations

gave an indication of the difficulties being experienced with such things as a shortage of staff due to the effects of the pandemic, reduced load and sales due to financial difficulties faced by companies and individuals, and the uncertainties of the future, including such things as increasing cost of supply and load shedding.

Procedures adopted in utilities to protect workers from infection, including assessment of risk of the various categories of workers, was also discussed, as was the importance of good communications and adaptability.

Marcel Buckner of EATON gave an overview of the “total cost of ownership” of MV switchgear using SF6 as the breaking medium, highlighting environmental and human considerations that are often overlooked. He made the point that the company is now using the alternative vacuum breakers for their product lines.

Prof Raj Naidoo of the University of Pretoria gave an overview of sustainable power distribution with “smart grids” and emphasised the influence of the Internet of Things that is increasing its influence on the industry. These include advanced metering infrastructure, asset management including prediction of the assets condition, improving work flows and much more.

The presentation by the AMEU Strategic Adviser, Vally Padayachee covered a wide range of report-back items including details of various initiatives in which the AMEU is involved with SALGA and other parastatal bodies, Eskom tariff applications, NMD rules, changes likely to come when Eskom splits into the proposed 3 entities (generation, transmission and distribution), municipal procurement processes including power procurement, electrification budgets, SSEG and re-seller rules and many other matters.

## OTHER MEETING DATES

AMEU EXCO: 9th March; 17 November

AMEU Committees: 9-10 March ; 17-18 November

AMEU Convention: 24-28 October

AFFILIATES (Steering): 19 January; 23 March; 25 May; 20 July; 29 September; 23 November

AFFILIATES (Main): 26 January; 30 March; 1 June; 27 July; 5 October; 30 November.

AMEU DMRE-DHS: 12 February; 13 May; 12 August; 31 November

AMEU NEAC: 18 February; 20 May; 19 August; 25 November.

*NB: It is important to check these closer to the time in case changes have had to be made.*

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Women are playing an increasingly important role in our electricity distribution industry. Not surprisingly the dramatic changes that the Covid-19 lockdown conditions have imposed on us all has meant that women in front-line positions have had to quickly adapt because of the often unique dual responsibilities of work and families.

Here are notes from three of our WiE ladies who have successfully adapted and coped with the changes. It makes for interesting reading.



**Punkie Majola: Chairperson of Women in Electricity; Senior Engineer, City of Ekurhuleni**

"As an essential worker and mother the pandemic has given us time to reprioritize work / life balance, with children having to study from home under no supervision as we are having to be at work to ensure the

lights are kept burning.

Personal Protective Equipment at the workplace are the buzz words, with mask wearing, constant hand washing and social distancing. This had changed the ways we operate in the electricity sector: we had to relook at enclosed spaces and working processes, and had to learn the new ways of working, taking into account social distancing. These have been trying times.

Supporting the safety, physical and emotional well-being of employees must come first, and in times of crisis it is imperative that leaders communicate information to the employees, and help them process their emotions.

As a leader I have had to rapidly learn the new ways of communicating with executive management and my team members, this via various software platforms, to ensure the field teams understand their daily and weekly targets to ensure service delivery is adhered to in the City.

Across the world, organizations, communities and individuals are experiencing an unprecedented global pandemic that's considered by experts to be the most significant global change simulation of the century. Women are in the centre stage of ensuring that communities are getting support from the corporate sector where members of the society lost jobs due to the pandemic. Women continue to support the community and still lead organizations to make an impact on the economy of the country."



**Rose Setai: Deputy Secretary AMEU Woman in Electricity Secretary AMEU & SARPA Central Branch Snr External Sales Rep SOE&M and Optic Fibre at M-TEC**

"My job was primarily centered around travelling so when level 5 national lockdown happened I struggled to adapt to the shift

to working from home and not having face-to-face interaction with my customers. The sad reality is that we were not warned of this drastic change in daily business operations, we had to take each day as it came.

I had to find online platforms that facilitated discussions around coping with Covid19, which helped me to cope and find ways of working effectively from home, not to mention the challenges we faced with network issues, load shedding and data constraints. In the midst of this pandemic I saw opportunities for focusing on my personal development.

I applied for online courses, caught up with my filing and so on - it was not all doom and gloom as I was fortunate enough to get a promotion to a senior position, which has motivated me to study further towards my Postgraduate Diploma in Business Management this year. We have all lost loved ones due to this pandemic and I believe we have to adapt to the new way of living, protecting ourselves and our loved ones at all times."



**Lomile Modiselle: Deputy Chairperson: Women in Electricity (WIE) Director: Energy and Electricity City of Tshwane**

"During the start of the pandemic, most companies, including municipalities, struggled to adapt to the changes brought by Covid-19 in workplaces.

As a leader and a woman in the technical environment, I have learned that we needed to swiftly adapt with the so called "new normal" and had to move with speed.

Regardless of our traditional engineering skills, it has been increasingly critical to improve our skills in ICT, in that remote work is now increasingly prevalent. During the pandemic I had to adapt to the new way of interacting with my team members and sister Departments/Sections through virtual meetings, and attend distance learning through webinars, Microsoft and other collaboration methods.

I should also reflect on how travel restrictions affected and hindered the interactions we used to have with our peers in the engineering profession through conferences, seminars and workshops. It should be noted that, while online methods of training and interactions hold a promise of reaching a lot of participants, data access remains the bigger challenge in our country currently.

However, I believe that my efforts among those of many others, became relevant in the face of dramatic changes brought about by Covid-19. I was able to proactively prepare and schedule my teams in small groups placed in different workplaces, and this continuously assisted me to avoid the situation where positive cases affect service delivery to a point where there is a total shut down in my municipality. Again, as a Covid-19 survivor myself, I also appreciated the use of online platforms as a means of interaction and to perform my duties during the period of isolation".

**(Any other experiences that readers would like to record will be welcomed.. Ed.)**

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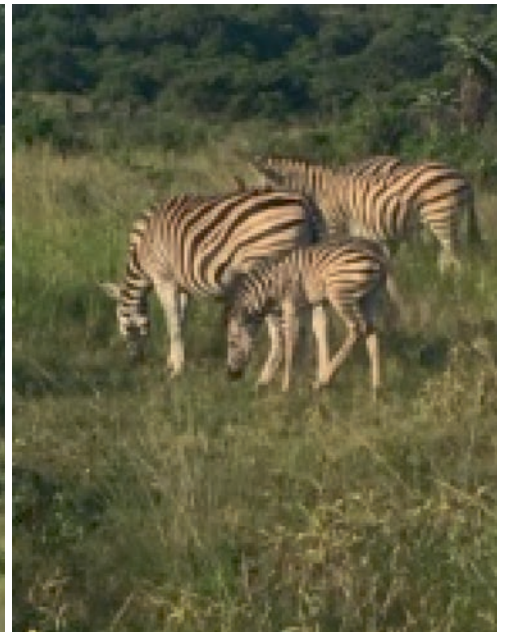


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## EXTERIOR LIGHTING FOR SKUKUZA SAFARI LODGE

**S**kukuza Safari Lodge is located in the world-renowned Kruger National Park, a South African National Park and is, at 19,485 km<sup>2</sup>, one of the largest game reserves in Africa. The newly-built Skukuza Safari Lodge offers world-class tourism facilities for local and international visitors and boasts 128 units.

BEKA Schröder has supplied some of the exterior lighting, which includes LED bollards, which are installed throughout the lodge's facilities, as well as the LED bulkhead luminaires, which are installed at the "back of house" areas, both providing energy-efficient outdoor area lighting.

The BEKA LEDPOST is a bollard luminaire that has been designed for orientation lighting and security marking. Locally manufactured, this robust LED bollard takes Africa's harsh thermal and environmental conditions into account, ensuring a long lifetime. The BEKA LEDPOST has been equipped with a highly efficient LED light source. The distinct design shields pedestrians and drivers from glare and prevents spill light from being emitted upward.

The BEKA SERIES 30 is a round LED bulkhead, manufactured from high-quality materials and designed for ease of installation and low maintenance requirements. Energy saving LEDs are the light source.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. We are very proud to be associated with SANPARKS Technical Team and Tom Hattingh Architects in providing a successful outdoor area lighting solution for this prestigious project.

**For further enquiries,  
contact Gordon Arons at  
011 238 0000 or  
[g.aron@beka-schreder.co.za](mailto:g.aron@beka-schreder.co.za)**



LEDPOST bollards provide energy-efficient outdoor area lighting at Skukuza Safari Lodge  
Images: Nadja Smith 11/1/2021)

# SARPA NEWS

Rens Bindeman writes, *“At the end of 2020 hopes were high that we at the Southern Africa Revenue Protection Association would start off 2021 with a new era of the “new normal” in Southern Africa. However, with the arrival of the second wave of the pandemic, all such hopes were dashed. We entered the New Year with a heavy heart and had to hastily make changes to our Convention strategy and adjust some other initiatives for the first quarter of the year”.*

## 2021 SARPA Convention

It became necessary to change the upcoming SARPA Convention to a full virtual event on the 4 - 5 March 2021. The theme is still “Harnessing technology for Revenue Protection”. The event will also feature a panel discussion on issues like AI, ML and Cyber security. The program was adapted in order to fit the MC for the gala event, Mr Wicus van der Merwe, into the virtual program. Very interesting papers will be presented at the convention, which will include a paper from the South African Police Legal department on issues related to the successful prosecution of revenue protection related crimes. More information is available regarding the registration and program on the SARPA webpage [www.sarpa.co.za](http://www.sarpa.co.za)

## Virtual events

The SARPA virtual events have again kicked off in 2021 with big success and the program has been finalised for the whole year. The trend of hosting two events per month has been retained, until travelling restrictions are relaxed. A strategy to host events in tandem with other Associations has already proven to be a winner, with the first webinar that was held in tandem with International Associations in January 2021. The goal is to cross-pollinate and share information across relevant organizations and therefore the next two events will be in cooperation with IMPS-SA and UKRA.

## Training to continue virtually

Training courses have been scheduled to commence again from March 2021 and will still be presented in the virtual format, until it is safe to do hybrid and later normal events again. The Specialized master-class that was held at the end of last year was a huge success and the mentorship program has already been launched. The combined AMEU and SARPA road show last year resulted in Albert Luthuli Municipality personnel attending a very successful training session late last year.

## Revenue recovery projects

SARPA decided to postpone the projects that were earmarked for the end of 2020 and has in the New Year embarked on its first Revenue Recovery survey at an Eastern Cape Municipality. It will be the first virtual revenue recovery exercise of its kind for SARPA and although there would certainly be challenges, it is envisaged that the processes might be easier than the way it was done before.

## Interaction with other role players

SARPA has initialized a program of reaching out to Government entities and other Associations, in an effort to share information and expertise. The SARPA President Mr Greg Stopford has embarked on a range of podcast sessions with leading figures in entities like NERSA, COGTA, SALGA and CIGFARO, which will be posted on the SARPA webpage.

**Anyone requiring more information should contact SARPA’s Technical Adviser, Rens Bindeman at [rens@mweb.co.za](mailto:rens@mweb.co.za) or go to the SARPA website [www.sarpa.co.za](http://www.sarpa.co.za)**

# CRIME STATISTICS

**A**MEU Affiliate company CPI was established in 2002 in response to the escalating crime of infrastructure theft and has grown to be a significant player assisting municipalities and other organisations to combat the scourge that is now costing the nation billions of rands each year.

The following figures are taken from their 2020/21 report and make interesting reading;

Over the past 10 years an average of 587 criminals have been “caught in the act” of criminal activities and apprehended each year.

Thanks to CPI efforts, for the 2020/2021 year the number of criminals found guilty of theft by courts was 22.

They were sentenced to a total of 1393 years in prison for their criminal actions. Many other court cases are in progress.

# AFFILIATES NOTES

The AMEU Affiliates play an important role in the Associations affairs and the Affiliates Committee members who serve on the various AMEU Committees make invaluable contributions to the day-to-day work of the Association.



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As a result of various changes in certain Affiliate Companies during the past year there have been some changes to their representatives and thus, to the main Affiliates Committee.

AMEU News congratulates them on their election and wishes them well in the important work that they do, much of which is “behind the scenes”.... KEEP UP THE GOOD WORK !

Below is an update of the team.

# UPDATE ON ACTIVITIES

The dramatic effects of the Covid lockdown over the past 12 months have forced a re-think of virtually all business and business-related activities. Not only have all the Affiliates Committee meetings and Main open meetings been converted to e-based affairs, also various fund-raising activities and social events have had to be cancelled or postponed for this year.

The other major activity, the exhibition and related activities organised by the Affiliates to run concurrently with the Annual AMEU Convention, is being planned on the assumption that the Convention will take place as a face-to-face event in the Durban International Convention Centre from 24 to 27th October 2021.

A “Plan B” is also being looked into in case the lock-down or

other restrictions are still in place by the scheduled date and render this impossible. The alternative will only be finalised when the detailed information concerning whatever changes need to be made, is available. Members will be kept fully informed on the developments.

The Committee has made a submission to the DoL in respect of two matters brought to their attention. The first is that it has been reported that there appears to be some inconsistency with the appointment of Engineers in posts requiring the Certificate of Competency as the conditional qualification under the Act. This is being investigated.

Also, a specific example of the use of duplicate exam papers for the CoC examinations were reported to the DoL. This resulted in the cancellation of the particular examination and its rescheduling with new question papers.

Further responses are awaited from the DoL.



# IN MEMORIAM - Vijay Batohi



The SA electricity distribution industry and the Association of Municipal Electricity Utilities of Southern Africa (“AMEU”) community sadly lost a pillar on Thursday, 14 January 2021, when Vijay Batohi, popularly known to his friends and colleagues as “VJ”, sadly succumbed due to COVID-19 pandemic related causes and complications. He is survived by his wife Anita, his daughter Kerisha and son Sandhir. Vijay was a Senior Manager (HV Network Control) at the eThekweni Metropolitan Electricity Department.

Vijay exuded professionalism and was an active participant in various national and international committees, within the electricity transmission and distribution industry. He was well known to most of us in the AMEU and Eskom System Operations. His contributions to the lives of many include having served on numerous AMEU committees over the years and most recently he also represented the AMEU on the Grid Code Advisory Committee (“GCAC”) and the NRS049 part 9 Committee.

He was also the Chairperson of the National Key Point Joint Planning Committee for electricity for eThekweni.

Vijay began his career in 1981 with eThekweni Electricity and progressed through the ranks to the level of Senior Manager (HV Network Control) until he resigned in 2009. He then took a short sabbatical to Australia where he worked as a Manager at Ergon Energy. In March of 2010, Vijay returned to eThekweni Metropolitan Electricity back to his previous position.

He was a committed public servant and a highly valued member of eThekweni Electricity’s management team. He was a regular presence at AMEU events and was always willing to share advice and resources. Many of his colleagues also consider Vijay as an excellent mentor.

Vijay was very passionate, energetic, knowledgeable, and always gave his best to whatever he did at all times. He will also be remembered for his quick wit, infectious smile, and his kind and compassionate spirit. He was a keen sportsman with a love for table tennis, squash, cycling and fishing. Vijay also enjoyed experiencing the great outdoors in his 4x4 vehicle.

Vijay’s legacy will live on in the hearts and minds of everyone he interacted with as well as those he reached and touched but never met. He will be sorely missed.

The following are some of the comments received from his colleagues, former colleagues, and friends on hearing of Vijay’s death.

- “I lost my partner and mentor. Death do not be proud. I am lost and sad. May his soul rest in eternal peace. God be with his family.
- I am so sorry to hear. A tree has fallen. Condolence to the family, colleagues, and friends.
- As a young engineer I learnt so much from Vijay. He was a fine example of a Senior Manager. His passing is a great loss to the industry. Rest in peace Vijay.
- Sad, sad news... I worked with Vijay for many years and then bugged him for help as a customer for many more years. He always took my calls and always went out of his way to help no matter the issue. He also always treated people with respect. I will miss him. Condolences to his family, colleagues, and friends.
- Vijay’s passing away is indeed a huge loss to his family, friends, colleagues, and the industry.
- He was one of the most dedicated and committed Senior Managers which eThekweni Metro Electricity and our industry had. He will be sorely missed.
- Rest in peace. I met Vijay at Eskom’s National Control corridors, and he referred to me by my first name, yet I left eThekweni Municipality over nine years ago. Very humble human being regardless of the position he held. Condolences to the entire family, eThekweni municipality and engineering industry”.

We extend our heartfelt and deepest condolences and sincere sympathies to his wife Anita, his children, the rest of the bereaved family, friends and colleagues.



## IN MEMORIUM - Joe Renney

It is with deep regret and great sadness that we record the passing of Joe Renney, an Honorary Member of the AMEU and an active participant in AMEU affairs, particularly of the Good Hope Branch. He was well known for his friendly nature and willingness to offer assistance, guidance and support to younger engineers with whom he had contact.

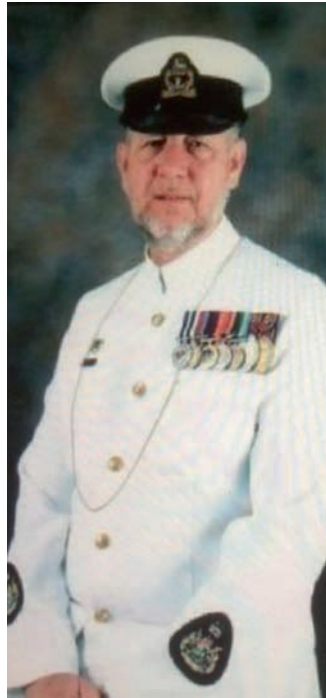
He was born on the 15<sup>th</sup> Jan 1947 and died on 23<sup>rd</sup> November 2020 after a period of illness fighting cancer.

For much of his career, he worked for the Western Cape Provincial Government and then, after his retirement a few years ago, as a consultant on a part time basis.

Joe also had a marine background and was a Master at SAS Unities, a Citizen Force base located in Cape Town Harbour.

He leaves his wife Francis and daughter Heidi.

***On behalf of his friends and colleagues numbered amongst the AMEU News readership, we record sincere condolences to the family on their sad loss. Ed.***



## IN MEMORIAM - Stuart Morrison

It is with deep regret that we record the passing of yet another stalwart of the AMEU, Stewart Morrison, who died on 16<sup>th</sup> January 2021. He was 79 years of age.

Durban-born, he received his higher education at Glenwood High and Durban Tech and spent his working career of over 45 years in the cable industry. He served with GEC Cables, African Cables and Aberdare Cables and was well known for his loyalty, honesty and hard work ethic. He was a mentor to many people and was always prepared to listen and to give guidance and advice, and was well-liked by colleagues and customers alike.

He was a regular attendee at AMEU functions and supported the Association throughout his career.

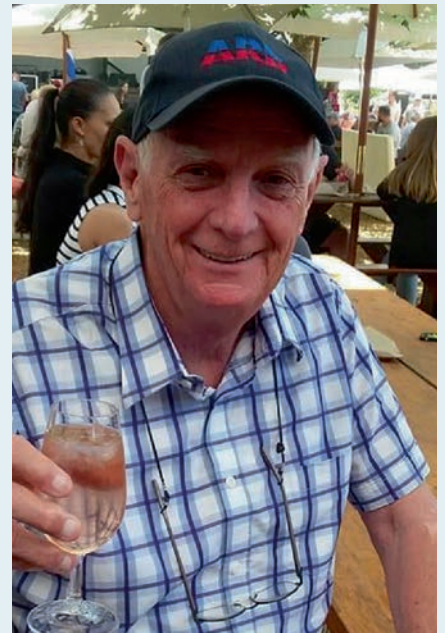
He was never afraid to innovate or take a calculated risk when this became necessary. An example was his management of cable stock-

holding in the Pinetown depot where his readiness to sell cut lengths on demand to the City of Durban Electricity allowed the utility to substantially reduce its own cable stock holdings.

Stewart was passionate about football and tried out for Chelsea Juniors as a teen footballer. His playing career saw him play for various periods with Addington FC, Pirates, Umbilo/Congella, Escombe and Ramblers.

Coaching kids' football became his passion after his playing days. He was the coach at Pinetown Football Club, a selector for County & Districts as well as for Durban & Districts and he also served as a selector for the Natal Football Association.

He also enjoyed watching rugby and his many Durban friends and colleagues recall enjoyable afternoons at Kings Park watching the Sharks games.



***He leaves his wife Maggie, five children and eight grandchildren, to all of whom we extend sincere sympathy on behalf of his many colleagues and friends numbered in our AMEU News readers. Ed.***

# UPDATE ON RAYCHEM CABLE ACCESSORIES

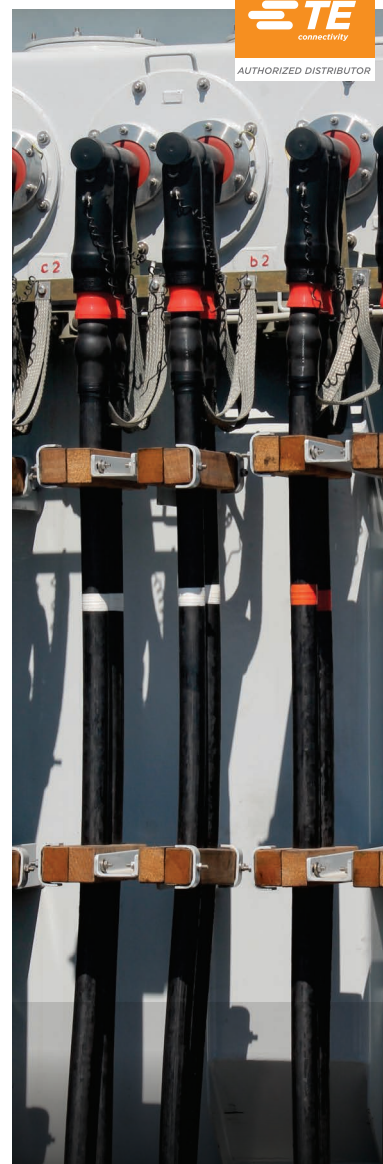
Engineers who may not be fully apprised of the position will be pleased to know that since 2018 the sole distribution rights in Southern Africa for the full range of TE Connectivity's Raychem products has been vested in the well known Cape-based company, Tank Industries.

The company, founded in 1986, has been involved in the cable industry for over 10 years and has an accredited EWSETA training facility in Cape Town for cable accessories. All SHEQ (safety, health, environmental and quality) standards are in place, with full compliance and consultants to provide guidance.

Tank Industries has an excellent reputation for service in the market and are proud to include the trusted Raychem products in their product range. Their Technical managers, Tommie Nortje and Adriaan Theron were both trained in Germany, and the comprehensive sales team under Rob Riley are based in all the major centres across South Africa as well as in African countries.

It is a B-BBEE level one status company and is part of the South African listed Reunert Group, which gives it backing and the advantage of having financial muscle.

**For more information contact their General Manager, Clive Maasch , phone: +27 (0)21 700-4380  
Mobile: +27 (0)836583231;  
Email: [clive.maasch@tank.co.za](mailto:clive.maasch@tank.co.za)  
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# NRS 098: GUIDELINES FOR THE INSTALLATION AND SAFE USE OF STANDBY GENERATORS ON UTILITY NETWORKS

Industry Work Group membership comprises R v der Riet, City of Cape Town; V Nundlal (Project Leader), Technical Governance; S Ntuli, eThekweni Municipality; N Khuzwayo, City Power Johannesburg Pty (Ltd); B Lamour, Nelson Mandela Bay Municipality; B Thwala, City Power Johannesburg Pty (Ltd); D Mtolo, Eskom Distribution; J Maudu, Eskom Distribution

Standby generators are widely used to provide electricity in the case of a mains power failure. This specification deals specifically with those permanent installations at which a stand-by generator is interfaced with the same circuitry as is used to locally distribute mains-supplied electrical power. This, in turn, presents a risk of inadvertent paralleling of sources of supply.

Certain sections of this specification are also applicable to stand-alone generators. Consumers who purchased portable generators to provide electricity in the event of power outages are obliged to use safety precautions. Portable generators can be hazardous if used improperly.

NRS 098 was compiled by an industry work group and is currently in the process of being approved by the NRS Management Committee. NRS 098 was developed with the aim of eliminating the risk conditions associated with the installation of portable generators due to the perception that the grid reliability is reducing, which can inadvertently create hazardous conditions when the generators are being used. This specification should be read in conjunction with SANS 10142-1.

The industry Work Group appointed by the NRS Association included a wide range of stakeholders, including representatives of the municipalities and Eskom.

The purpose of this specification is to specify guidelines and technical

requirements for the interfacing of permanently installed low-voltage generators with the local supply network, and to ensure that they do not compromise the network integrity or safety of the utility or the user. The specification describes some of the dangers presented by interfacing a standby generator with mains-supplied premises.

NRS 098 deals specifically with those installations at which a standby generator is interfaced with the same circuitry as is used to distribute mains-supplied electrical power locally. Generators that are operated separately from the local supply (e.g. portable generators that supply lighting or heating circuits directly) are excluded from the requirements of this specification, although some of the safety precautions might still be applicable.

This specification applies specifically to installations where the generator is prohibited from paralleling with the mains supply. Where it is required for a generator to parallel with the mains supply, for whatever reason, this shall be agreed upon beforehand by the relevant parties, and the agreement might be subject to additional technical requirements. This specification excludes grid-tied and hybrid embedded generators, and UPS's.

**For further queries, please contact Vishal Nundlal at [SewchaV@eskom.co.za](mailto:SewchaV@eskom.co.za) or Dumisani Mtolo at [MtoloPD@eskom.co.za](mailto:MtoloPD@eskom.co.za).**





# INNOVATIVE PRODUCTS FOR L.V. CABLE JOINTING

An extensive range of products that will revolutionise the way cable joints and junction boxes are installed is now available from HellermannTyton.

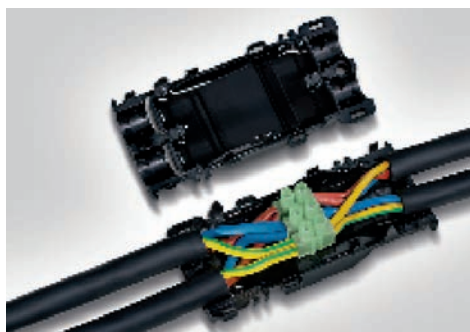
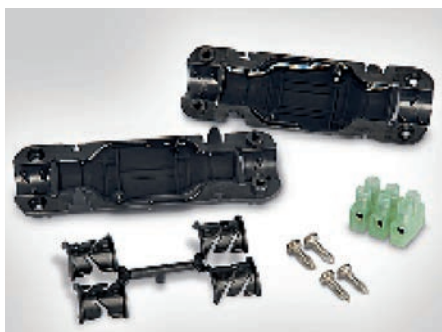
One such product, RELIGEL is a two-component silicone gel that can be applied pre- or post-installation and which offers excellent insulation and moisture resistance. It reaches an IP68 rating in 23 minutes and is soft and elastic once set. It also has the advantage that it can be safely removed without special tools.

Religel provides corrosion protection due to the elimination of both oxygen and water from the boxes, and as it contains no hazardous substances it is non-toxic and can be disposed of with household waste. It can be used for both indoor and outdoor applications.



Another product now available is the Relilight gel cable joint. It has compact dimensions and is designed for safe and reliable connection and branching of the small cross-sections cable now commonly used in lighting installations - especially LED systems. It incorporates integrated strain relief and an IP68 rating, making it an ideal product for confined spaces and wet or dusty conditions. It is also resistant to ageing and weathering and can withstand temperatures from -30°C to +130°C.

Relilight is ready-to-use out of the box and offers excellent mechanical protection, insulation, strain relief and sealing in a single step.



## Some of its benefits are

- Assembly is simple and quick and no special tools are required
- Relilight cable joints can also be reopened so that changes can be made to the cable connection later or electrical measurements taken – Religel is used to refill the joint
- Relilight straight-through and branch joints consist of a non-toxic gel – with high dielectric strength >1kV – pre-filled in a flame-retardant and weather-resistant moulding shell made from polyamide 6.6
- Relilight cable joint sets can be used on polymeric cables and wires made of PVC, PE, EPR and VPE for conductor cross-sections from 0.35 mm<sup>2</sup> to 6 mm<sup>2</sup>
- All nine sets have an IP68 protection rating and provide electrical connections with optimal protection against dust and moisture in the voltage range 12V - 24V as well as 250V (6A) up to 450V (25A)
- Certified according to EN 60998-2-1:2004
- Unlimited shelf life when unopened

**For more information on these innovative products contact: Garreth Johnson on 011 879 6662, [garreth.johnson@hellermann.co.za](mailto:garreth.johnson@hellermann.co.za) or Lee Vermeulen on 011 879 6600, [lee.vermeulen@hellermann.co.za](mailto:lee.vermeulen@hellermann.co.za)**

# HellermannTyton

# FOR THE HARSHTEST ENVIRONMENTS



IP68

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# UPDATE ON ENERGY STORAGE

We all know that “sustainable energy” and “energy storage” go hand-in-hand. It is a given that in a perfect world when the sun shines and PV installations are working at their best, there is always a need to store what is essentially short-term surplus energy. Much the same applies to wind-derived energy.

While pumped-storage schemes have been used for this purpose for many years, availability of sites and associated engineering costs make this an increasingly difficult option.

Innovative schemes such as using rail systems and other “weight-based” systems have all been tried and are successful up to a point.

Battery storage is the obvious answer to the problem and the search for better batteries has produced excellent results and efficiencies and economies are being improved all the time. Nonetheless, the search for better systems goes on and there will always be a new concept or development.

One such is by an Italian company, Energydome. Their website gives the following clue to their mission:



“Our proprietary technology uses the same CO<sub>2</sub> that causes climate change in first place, to help solve the problem. By means of a closed thermodynamic process we use CO<sub>2</sub> to store electricity cost effectively with unprecedented round trip efficiencies, without any emission to the atmosphere”

“In charging mode the CO<sub>2</sub> is compressed and stored under pressure at ambient temperature in a high density supercritical or liquid state. When energy is to be released, the CO<sub>2</sub> is expanded into a turbine and stored back into an atmospheric gasholder, the Dome, ready for the next charging cycle.

By storing in the liquid phase at ambient temperature we significantly reduce the storage costs typical of CAES (Compressed Air Energy Storage) without having to deal with cryogenic temperatures as in the case of LAES (Liquid Air Energy Storage).”

*Their web-site makes interesting reading, and it's early days yet, but who is to say whether they will develop the technology to the point that it becomes a real alternative in a growing market, with no end-of-life disposal problems - interesting times we live in ! Ed.*

## REPAIRABILITY... we need to be reminded

Most of us have lived with planned obsolescence for so long that we barely remember the expression any more. Worse still is that to a large extent we have become largely blinded to the related problem of waste disposal. Depending on your source, it is reckoned that in excess of 50 million tonnes of e-waste was generated in 2019 and most ended up on scrap dumps around the world !

In what must be a world first, France has now decided to do something

about it. From 2022 a “repairability index” will be obligatory on certain electronic devices including such items as lap-tops and cell phones. This will give buyers an indication of how repairable the particular item is.

Media reports indicate that manufacturers will be required to use criteria such as availability of technical repair documents, availability and cost of spares, and ease of disassembly, amongst others.

According to media reports, France

intends to expand this to other classes of consumer products and by 2024 will introduce the concept of a “durability index” that will not only give an indication of the repairability but also an indication of the product’s robustness.

***(Some may argue that this will inevitably result in increased costs but if it contributes to lowering the hidden costs of wastage and environmental damage, it has to be a win-win development. ED)***



# MORE ABOUT GLOBAL WARMING

The recent announcement of the completion of the 140MW wind project, Nxuba, in the Eastern Cape, and another - Excelsion, 33MW - near Swellendam, plus others, serves to confirm our nation's commitment to greening our electricity generation and generally moving to a lower-carbon energy society.

Encouraging news is that at the other end of the equation - energy consumption - research and projects into ways to reduce greenhouse gas and emissions are ongoing - and every little helps.

## Consider this

World-wide consumption of crude oil runs to something of the order of 90 to 100 million barrels per day (depending in what internet browser you use). With one barrel holding about 159 litres, after use in combustion engines and other heating devices, the volume of green-house gasses that end up being exhausted into the atmosphere are mind-boggling, astronomical figures.

**Global shipping** uses +/- 4m barrels each day of these 90+ million barrels.

Now, the bow wave, which develops at the front of every ship as it ploughs its way through the water, adds to the fluid drag on the vessel. Dating back



to the early 1900's ship designers found that by clever design this wave could be reduced or neutralised by adding an underwater bulbous nose to the vessel. This nose was found to generate a second bow wave that is 180 deg out-of-phase in time with the primary wave.

This has the effect of cancelling out the drag of the bow wave and reduces the power required to propel the ship. Astonishing energy savings of the order of 10 to 15% have been achieved.

While it is probably fair to say that the initial research and development were driven more by efficiency and economic considerations rather than pollution considerations, none the less, reductions in carbon emissions were a direct result, and must be acknowledged as such.

In similar vein there is a new closely related development. A company, Silver Stream Technology, has developed a technique whereby air bubbles, generated by an on-board compressor, are ejected through a series of nozzles under the front of a ship's hull and, mixing with the water, create an "air lubrication" film that reduces friction and significantly reduces the power needed to propel the ship. Reduction in overall fuel use is of the order of 5 to 10 %.

**Research and developments are ongoing. Expect to hear more as the pressure to reduce emissions increases. Ed.**

# AND ANOTHER REMINDER!

We need to remember that in 2018 - here in South Africa - IESSA along with the companies Beka Schröder, Eurolux, Ledvance, Osram and Voltex set up an **Extended Producer Responsibility Scheme** which aimed to promote recycling and generally reduce e-waste associated with lighting equipment.

Light Cycle South Africa is a

not-for-profit organisation that was founded in 2018 to follow up on the concept. Its mission is to facilitate and establish an operational framework for the safe and efficient take-back, management and recycling of all lighting waste generated in South Africa, as part of its entire life-cycle. This will be done through trained and accredited operators and service providers applying best-practice principles.

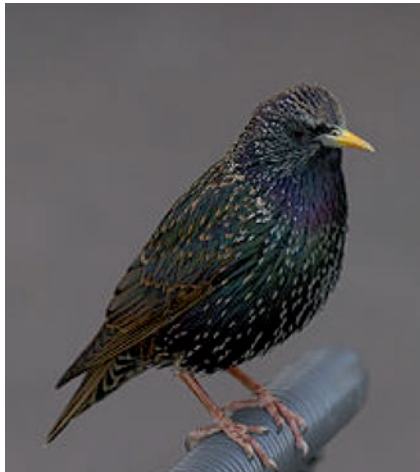
Following discussions with the Minister in 2020, Extended Producer Responsibility Regulations have been developed and are expected to be operative from 5th May 2021.

**(Well done, keep up the good work ! Ed.)**

# BIRDS ON A WIRE

Electrical infrastructure and birds have an attraction for one another - sometimes fatal - and AMEU News has often carried stories of the work being done to minimise the unfortunate detrimental effects that each often have on the other. Special HV insulation on portions of overhead lines at support structures near dams, marker-balls on transmission lines that span flight paths, metal spikes on transmission towers positioned to keep birds away from insulator strings, special bird perches to maximise the distances to conductors, positioning wind turbines away from nesting sites, the list of remedies is endless..

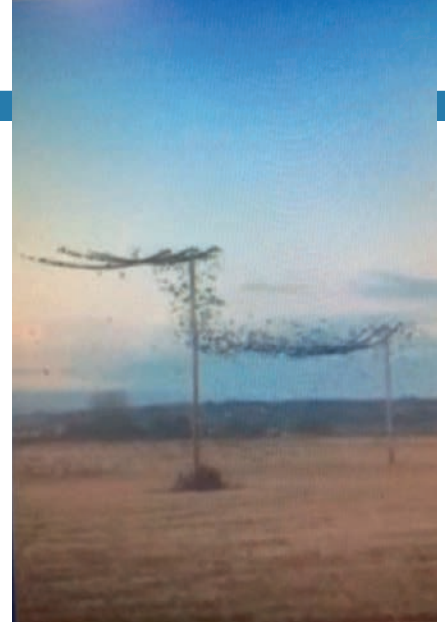
But here's one with a difference. The Scottish town of Airth is located near Falkirk, north of, but roughly halfway between the Cities of Edinburgh and Glasgow. A series of unexplained trips and re-closures of the



electricity supply has now been identified by an engineer of Scottish Power during an early evening walk along the power-line servitude. It turns out that thousands of common starlings gather each evening and use the HV power lines as a collection place and temporary perch. The bouncing of the lines when the birds take off in unison, and relieve the wires of their combined weight, has resulted in conductor clashing and tripping of the power supply.

Scottish Power engineers are working with Conservation staff to find the most effective way of encouraging the birds to use alternative resting sites !.

***Does this have a familiar ring about it ? Send a line or two sharing your experiences. Ed.***



## ENVIRONMENTAL NEWS...

Our 99th issue of AMEU News (November 2019) carried a story of how London's Hanwell Zoo had exhibited a large sculpture of an elephant, by Tony Diaz. It was 2,4m high and weighed about 2t, and was made up of discarded dry-cell batteries. The purpose of the exhibit was to raise awareness of the growing problem of used dry-cell batteries and the need for more effort to be put into re-cycling of this waste.

Now consider this - the world-wide sales of electric motor vehicles exceeded 1- million in 2017. According to research done by the UK's Birmingham University, when these vehicles are scrapped after about 10 years of service (say, 2027) about 250 000t of battery waste will either be dumped or re-processed.

By 2030 the number of electric vehicles on the roads world-wide is



*Image sourced from internet*

expected to be in excess of 100-million, possibly even exceeding 200- million.

While some recycling plants already exist and more are to follow, the processes involved are not easy and are expensive and energy intensive. Research into the recovery processes is ongoing and more economical and effective processes will surely be developed. It won't necessarily be easy, but watch out for an even larger sculpture to appear in the Hanwell Zoo in a couple of years time !

# STOP PRESS ! EXCO NEWS

The recent cluster of AMEU EXCO and Committee meetings took place on the 9th and 10th of March 2021. They were all in virtual format. Reports and updates on a number of matters currently receiving attention by the Executive and the various committees were presented, and the appropriate actions taken.

The most important decision from EXCO is that the 2021 Convention will not be face-to-face as had been hoped, but will now be on line. A special sub-committee

will be studying various possible formats and software programs that are available to use for this type of event. Once a decision has been reached, it will be all systems go to make detailed arrangements for the many activities that will take place. These include the formal hand over of the reins of the AMEU to the current Deputy President.

## A LITTLE PIECE OF HISTORY...

Readers will be interested to know that the IET, the London-based Institution that looks after the interest of Electrical Engineers in the UK and all around the world, is about to celebrate its 150<sup>th</sup> anniversary!

What is interesting is that although Michael Faraday had discovered electromagnetic induction in 1831, electricity was used mainly as direct current (DC) and in particular, for telegraphy. By 1870 over 2000 men and 500 women were employed by the telegraph companies in the UK, predominantly as telegraph operators.

Societies were already in existence for Mechanical and Civil engineers but the new science of electricity had not yet found its feet and no organisation existed to cater for the needs of the people employed in this field.

This was all changed when The Society of Telegraph Engineers (STE) formally

came into existence on 17 May 1871 at a meeting held in 2 Westminister Chambers, Victoria Street, London. The prime mover in this endeavour was a Major Frank Bolton who had been involved in army signalling. Eight people attended - including Major Bolton - and the first President was Charles William Siemens.

The Society underwent various name changes over the years, and the current IET (Institution of Engineering and Technology) was adopted in 2006. It has about 158 000 members spread in 150 countries around the world.

## MONEY AND RELATED MATTERS...

### EKURHULENI

Most of our readers will be aware of the dispute that arose some time back between major electricity consumers supplied by Ekurhuleni Electricity, and the municipality. This centred around their complaint that they considered their electricity tariffs to be too high. Essentially their request was for Eskom tariffs to be applied.

After lengthy discussions a settlement has been negotiated in which the consumers have agreed to pay an Eskom Megaflex tariff plus a percentage to cover the municipality's operational and other related costs.

### JOHANNESBURG

In case you have forgotten, in 2016 Gallagher Estates in Midrand were successful in obtaining a court ruling against the Johannesburg City Council in a matter concerning the onus of proof in respect of the accuracy of a services account. This particular case arose in respect of an account for water usage which Gallagher believed was incorrect because of a faulty meter.

The Judge ruled that in consideration of fairness the onus was on the municipality to prove the correctness of the meter and, by implication, the accuracy of the account levied. It was ruled that it would be unfair to burden the consumer with the responsibility of proving that the meter was not functioning correctly.

This is good news for consumers, but it does mean that supply authorities must exercise proper care with meter testing and records.

***(It is worth being reminded that this is becoming all the more important for electricity utilities as tariffs rise and more "own generation" systems are installed, with power being "wheeled" through networks on an increasing scale. Utility engineers can ill afford having to spend time on court cases! Ed)***



# A FISHY STORY THAT IS WORTH A READ

The fish that is commonly known as the dusky kob, or sometimes kabeljou in South Africa, is usually found in our East Coast waters from about the Breede River estuary, northwards. It is also distributed in many Indo-Pacific oceans, particularly off the various continental eastern coastlines.

As is the case with many marine – and land – animals, it is considered endangered and extensive research is under way to try to understand its movements, and thereby facilitate appropriate protective measures to ensure its survival.

The Breede Estuary is one of South Africa's last estuarine systems where recreational anglers often catch individuals reaching and even exceeding 50kg in weight, and which can live for over 40 years.

Researchers capture fish and fit uniquely identifiable acoustic tags - which are surgically inserted into the fish's body cavity through a small incision. This is then sutured closed and the fish is released.

The tags have a life span of approximately eight years and can be detected from as far as 500m underwater by acoustic receivers anchored at various places on the sea-bed. These listening stations record the date and time and the unique identification code of the fish.

Current research has included deploying sixteen acoustic receivers in the Breede Estuary and four more at sea in the area surrounding the river mouth.

They are serviced twice a year and the stored data is downloaded for study purposes. When fish move outside of this immediate area they are monitored by more than 100 tracking stations located up the coastline. In 2018 the marine

receiver array was extended to cover the neighbouring De Hoop Marine Protected Area.

Forty adult dusky kob were tagged in the summer of 2016/17, and an addition 10 juveniles during 2017.

One can only wish the scientists well with their research. May a practical and ultimately successful survival plan result.

## So what so special about this?

Consider the following: a capsule sized about 60 mm long x 16 mm dia. houses a battery and electronic circuitry that operates continuously for +/- 8 years and generates an acoustic signal strong enough to travel 500m under water - and the listening stations are in the same league. Although they are lifted from the ocean floor at 6-monthly or 12-monthly intervals - mainly for downloading the data - their batteries and electronics are operating in some of the harshest environments imaginable, and keep going. All-in-all pretty good engineering in my book! Ed



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