

ISSN: 2276-7754

- FEC Approves N26B For Transmission Lines Upgrade
- FG Lays Foundation For A New Transmission Substation In Oro, Kwara State
 - NERC Holds One-day Workshop On SCADA/EMS



EDITIONS OF TCN TRANSMISSION NEWS PUBLISHED IN 2022





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EDITOR'S NOTE

The TCN Transmission News crew is delighted to present this edition of the Transmission News Magazine. In this issue, we showcase completed and ongoing projects of The Transmission Company of Nigeria, TCN, as well as other initiatives undertaken by the company to fulfil its mandate.

The Engr. Dr. Sule Ahmed Abdulaziz led management is firmly committed to implementing TCN's strategic mission through the aggressive implementation of the well-articulated Nigerian Electricity Grid Maintenance, Expansion and Rehabilitation Programme, NEGMERP. As we continue to report the initiatives and achievements of TCN in this edition, we testify to the dedication of the current administration to grid efficiency and expansion.

As the middleman in the power sector value chain, our efforts are often not readily apparent to the general public since they are operationally intertwined with the complementary roles of other players in the power sector value chain. Therefore, we will continue to provide information and highlight events that shape TCN to foster a better understanding of the efforts and milestone achievements of "TCN" in the power sector.

We are delighted to note that the grid has been very stable in recent months due to the aggressive project implementation efforts of the current administration of TCN and in collaboration with other stakeholders in the sector.

As the axiom says, "the reward for hard work is more hard work," the Engr. Dr. Abdulaziz led Management with the support of the Federal Government, and the TCN Governing Board has not rested on its oars, as initiatives that will substantially impact transmission services nationwide are constantly being conceived and implemented.

In this edition, we also featured the approval by the Federal Executive Council for the procurement and

installation of electricity conductors for transmission lines upgrade nationwide. Additionally, we highlight the foundation laying ceremony for a new 60MVA transmission substation in Oro, Irepodun Local Government Area of Kwara State, designed to boost power supply in the area.

TCN has delivered numerous transformers and their accessories to increase the capacity of its substations nationwide. Some have been installed and commissioned while others are ongoing. New substations have also been completed, while some are being executed. A few of these projects are featured in this edition.

Management equally focused attention on human resources and industrial harmony. We featured efforts aimed at ensuring a balanced Management-Union collaboration, as well as staff empowerment for skill optimization.

Despite the recurrent challenges, such as vandalism and laterite excavation close to transmission towers, which negatively impact TCN's grid expansion plans, TCN has continued to make giant strides in implementing its grid plans.

We believe that information is power. We therefore invite you to read this edition of the Transmission News to stay informed about our milestone achievements and plans.

We pledge to continue doing our best to provide you with regular updates on the company.

Ndidi Mbah Editor – in - Chief



Buhari Tasks Contactor On Speedy Completion Of New Substation In Akwa Ibom

By Juliet Uzor

President Muhammadu Buhari, has tasked the contractor handling the 2x30/ 40MVA,132/33kV Transmission Station at Ibiono-Ibom, Ididep Local Government Area of Akwa Ibom State to deliver the project according to specifications and timeline for completion.

He gave the directive on Monday, 20th February, 2023, while performing the groundbreaking



Minister of State, Power, Goddy Jedy-Agba, OFR, unveiling the commissioning plaque

He pledged the State G o v e r n m e n t 's c o m m i t m e n t t o providing necessary support to ensure seamless completion of the project.

The Managing Director and Chief Executive Officer of Transmission Company of Nigeria (TCN), Engr. Dr. Sule A b d u l a z i z, w a s represented at the event by the General Manager, Engineering, Engr. Abba Shehu. He gave the assurance that the Company would

ceremony for the construction of the new substation.

The President who was represented at the event by the Honourable Minister of State, Power, Goddy Jedy-Agba, OFR, said the project was part of efforts by the Federal Government to further strengthen capacity of the Transmission Company of Nigeria, (TCN).

According to the President, the project was a fulfillment of the promise made by his administration to do something for the people of Akwa Ibom State.

Speaking earlier, Governor Udom Emmanuel of Akwa Ibom State commended the Federal Government for always partnering with the State Government especially in the area of power transmission.

Udom who was represented by Dr. James John Etim, the State Commissioner of Power and Petroleum, expressed optimism that the construction of the substation would energize business life in Akwa-Ibom State and South South generally. monitor the progress of work to ensure that it was done according to specification.

The MD further revealed that "the engineering design and soil investigation have all been done and approved by TCN Management. The contractor has also placed orders for the importation of equipment. So, everything is set for the swift completion of this project".

On his part, Director of Transmission, Ministry of Power, Engr. Nosike Emmanuel, said the project was being handled by Messrs Jamec West Africa Limited and has eighteen (18) months completion period. On completion, the substation will have six feeders radiating to neighbouring communities, he added.

The Paramount Ruler of Ididep Ibiono, His Royal Majesty, Ime Udo Usoro who graced the occassion expressed deep gratitude to the Federal Government and assured of the host community's support.

FEC Approves N26B For Transmission Lines Upgrade

By Uloma Osuagwu



Minister of Power, Engr. Abubakar Aliyu, FNSE

he Federal Executive Council (FEC), during its weekly meeting on 15th February 2023, approved over twenty-six (26) billion naira for the procurement and installation of electricity conductors for upgrading of transmission lines nationwide.

The Minister of Power, Engr. Abubakar Aliyu, FNSE, made this known when he briefed State House Correspondents on the outcome of the Council meeting which was presided over by President Muhammadu Buhari.

He disclosed that FEC also approved the procurement of twenty transformer ratio analysers; a state-of-the-art equipment for testing the reliability of transformers and switch gears at the total cost of N1.46bn for TCN.

Engr. Aliyu said that the upgrade which is aimed at strengthening the capacity of Transmission Company of Nigeria (TCN), in order to shore up power supply in the country, involves the re-conductoring of 132kV single circuit

transmission lines to double circuit to tackle the challenge of constant tripping of circuit breakers due to overloading of transmission lines.

In his words, "these are existing lines which are being upgraded. The wires will be removed and new ones put in place and the difference is that the new ones will be more efficient because they will carry more load than the old ones. They will reduce sagging because once the wires are aged, they will sag and they become vulnerable and heavier. So, these ones are lighter and can carry more electricity."

The project which includes an offshore component of \$11.19m and N421.49m onshore, will traverse across 173 kilometres Kumbotso- Hadeja line; 105 kilometres Kumbotso-Kankiya line; 90-kilometre Benin-Irrua line; 72 kilometres Irrua-Okpella; 48 kilometres Okpella-Okene, 58 kilometres Okenne-Ajaokuta lines and 394 kilometres Gombe-Biu-Damboa-Maiduguri line.

Quotes

Your future is created by what you do today, NOT TOMORROW.

-Robert Kiyosaki

FG Lays Foundation For New Transmission Substation In Kwara State

By Omideji Oluwakayode



Minister for Information & Culture, Alhaji Lai Mohammed, addressing members of the press at the groundbreaking ceremony of the new 60MVA 132/33kV substation in Oro, Kwara State

o boost bulk power delivery in Oro, Kwara State, the Federal Government has laid foundation for the construction of a new 60MVA 132/33kV transmission substation in Oro, Irepodun Local Government Area of Kwara State.

Speaking while performing the groundbreaking ceremony of the substation on Thursday, 16th March 2023, the Minister of Information and Culture, Alhaji Lai Mohammed, said the project which also includes a 5-kilometer turn-in-turn-out Offa-Omu-Aran 132kV Double Circuit transmission line, is expected to be completed within 18 months.

Alhaji Mohammed who described the project as a game changer aimed at transforming the lives of the people and boost

socio - economic activities in the area, said it was approved by the Federal Executive Council (FEC) on 21st December, 2022.

He enjoined the people of Oro to provide the necessary support to facilitate the project completion while assuring that the Federal Government remained committed to improving the quality of lives of her citizens.

In his remarks, the Managing Director and Chief Executive Officer of Transmission Company of Nigeria (TCN), Engr. Dr. Sule Ahmed Abdulaziz, stated that the continued increase in power consumption in Oro and its environs necessitated the conception and award of the contract.

According to him, the community presently depends solely on

a 7.5MVA, 33/11kV injection substation which takes supply from the 33kV Isanlu feeder radiating from an existing 2X30MVA, 132/33kV Substation at Omu Aran and supplies about 8MW to eleven (11) towns, including Oro.

He added that the proposed Oro Transmission Substation project will solve the problem of suppressed load and overloading of the existing substation at Omu Aran, as more bulk electricity would be made available to Ibadan Electricity Distribution Company (IBEDC), DisCo for onward distribution to its customers.

Abdulaziz further disclosed that the 132/133kV Oro Substation was designed by TCN engineers to provide additional electricity to the area, with room for expansion to meet future load demand, and enjoined residents of the community to support TCN in its bid to ensure timely completion of the project.



Minister for Information & Culture, Alhaji Lai Mohammed, performing the groundbreaking ceremony



MD/CEO TCN, Engr. Sule Abdulaziz, performing the groundbreaking ceremony



Third from left, Minister of Information, Alhaji Lai Mohammed, MD/CEO TCN, Engr. Dr. Sule Abdulaziz, Head of Aro family in Oro LGA and Aro family members

NERC Holds One-day Workshop On SCADA/EMS

By Uduak Etukudo

of SCADA, Remote Terminal Units (RTU's) will be provided in all Control rooms, off-takers' site and the Generator's Control rooms to ensure secure, timely and seamless transmission of signal to and from the National Control Center (NCC), in compliance with the System Operator's (SO) requirements as stipulated in the Grid Code.

He expressed optimism that the workshop would frontally address SCADA challenges even as he enjoined all stakeholders to actively participate and contribute in the effective deployment and operations of the SCADA/EMS systems in

order to develop a more stable grid in NESI.

On her part, the General Manager, System Operations (SO), Engr. Mrs. Nafisat Ali, called for the cooperation of all stakeholders to come up with ideas that would lead to the successful implementation of the SCADA project.

She revealed that the non-implementation of SCADA has led TCN engineers to provide a temporary stop gap measure using IoT VPN technology to help bridge the gap in control room visibility.

Ali urged all stakeholders and project consultants to see the workshop as an avenue to acquaint themselves with the fundamentals of SCADA, study what led to its failure in the past, and proffer solutions that would lead to the successful implementation of the new SCADA.

The General Manager emphasized that "SCADA will ensure reliable and secure operation of Nigeria's transmission grid, enable TCN to manage its grid assets, respond to outages and emergencies, maintain power system stability, transmit realtime data from various devices and sensors installed throughout the grid, amongst others".

L-R, GM (NCC), Engr. Balarabe Abdullahi, GM (ISO), Engr. Mrs. Nafisat Ali, and Commissioner, Engineering and Performance Monitoring, NERC, Dr. Chidi Ike

In preparation for effective deployment of Supervisory Control and Data Acquisition (SCADA)/Emergency Management System (EMS) and telecommunication project, the Nigeria Electricity Regulatory Commission (NERC), recently held a one-day workshop for all stakeholders in the power sector.

Speaking at the event which held at NERC's Corporate Headquarters in Abuja, Chairman of the Commission, Engr. Sanusi Garba, lamented that challenges that have marred the successful implementation of SCADA over the years have led to frequent disturbances of the nation's power grid.

Engr. Garba who was represented by Dr. Chidi Ike, Commissioner, Engineering and Performance Monitoring, reiterated the need for a functional SCADA/EMS in the Nigerian Electricity Supply Industry (NESI).

He maintained that lack of SCADA/EMS has hampered the visibility, control, real-time exchange of information among users of transmission system and reliable event recorders that would have aided the determination of specific locations and times when system disturbances were initiated.

Continuing, he added that with the successful implementation

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TCN GOVERNING BOARD



Photorama TCN Board's Visits



Visit to TCN Central Store, Ojo, Lagos, to inspect 22 power transformers and equipment spare parts received at the store





Visit to Lekki 330/132kV Transmission Substation, to inspect project upgrade in the substation.



Visit to the proposed site of the 2x60MVA, 132/33kV Eko Atlantic Substation in Lagos. Discussions were centered on fast-tracking the project implementation processes to enable the construction of the substation which will supply electricity to Eko Atlantic City in Lagos.

TCN Reaffirms Commitment To Providing Steady Power Supply To NIGELEC

By Grace Sambe-Jauro



TCN and NIGELEC team during the meeting

he Managing Director/Chief Executive Officer of the Transmission Company of Nigeria (TCN), Engr. Dr. Sule A. Abdulaziz has reaffirmed the Company's commitment to providing steady electricity to the Niger Electricity Corporation (NIGELEC) of Niger Republic.

Engr. Abdulaziz gave this assurance during a meeting with the Managing Director of NIGELEC, Mr. Halid Alhassane, and his team on Tuesday, March 14th, 2023, at the TCN Corporate Headquarters in Abuja. During the meeting, the MD/CEO, highlighted TCN's commitment to proactively patrol transmission lines and conduct preventive maintenance before any faults occur. He explained that this measure would help to ensure steady power supply to NIGELEC and other electricity consumers in ECOWAS Sub-Region.

In his remarks, Mr. Halid Alhassane appreciated TCN's efforts in ensuring reliable power supply to the region, emphasizing the importance of the partnership between the two organizations for regional economic growth and development. He also discussed the progress of the WAPP North Core and the Northern Corridor Projects, which aim to enhance bulk power transmission to WAPP member states.

Mr. Alhassane also highlighted among several others, some challenges confronting NIGELEC, such as load peak and optimal use of power transmission capacity during the approaching rainy season. and the issue of ensuring adequate compensation in project affected areas.

Responding, the General Manager, Transmission, Engr. Oluwagbenga Ajibola assured the team that TCN was already conducting routine maintenance activities and upgrading its infrastructure. In line with this, the TCN boss directed that all issues raised during the meeting by NIGELEC must be addressed urgently. Both parties agreed to have a follow-up meeting to monitor progress and ensure timely delivery of the projects.



MD/CEO TCN, Engr. Dr. Sule Abdulaziz with MD NIGELEC, Mr. Halid Alhassan with Management staff of the two companies after the meeting

TCN Assures Lagos Govt Of Efforts To Meet Bulk Power Demand

By Uduak Etukudo

he Lagos State Government has been assured of TCN's continued commitment to meet bulk power demand of the State and country at large.

This assurance was given by the Managing Director and Chief Executive Officer of the Transmission Company of Nigeria (TCN), Engr. Dr. Sule Abdulaziz, when he hosted the State Commissioner for Energy and Mineral Resources, Mr. Olalere Odusote and his entourage at TCN Corporate Headquarters on 2nd February, 2023.

The MD/CEO who was represented by the Executive Director, Transmission Service Provider, Engr. Victor Adewunmi, said that TCN was executing several reinforcement projects which entailed building of new substations in the State.

The projects, estimated to cost about \$56,000 000, will be situated in Alagbon, Ijora, Ikota, Lekki, Maryland, Alausa, Amuwo Odofin, Itire, and Akoka, areas of the State.

The TCN helmsman however, lamented that despite assurances from the State Ministry of Environment and the Survey Department, complaints on the use of coastal routes for the transmission lines project still persists. According to him, it was agreed at a meeting with Lagos State Government officials in 2022, that a substation should be located at the Export Promotion Zone (EPZ) and that based on expert recommendation, the lines should radiate from Epe, through EPZ to Lekki along the coastal corridor.

Engr. Abdulaziz mentioned that in addition to the reinforcement projects in Lagos State, TCN was undertaking several other infrastructural projects including the Eko Atlantic Substation project.

He acknowledged the increasing population and commercial activities in Lagos State, and the concomitant increase in demand for power and assured the visiting team of TCN's commitment to meeting the expectations.

Speaking during the meeting, Mr. Olaleye Odusote commended TCN for the efforts to improve electricity supply in Lagos. He promised to close ranks with the Company to enhance smooth completion of ongoing projects, while promising to follow up with relevant authorities to address the issues relating to the use of coastal route for transmission lines.



TCN Management with Lagos State officials during the courtesy visit

RTM's Charged To Be Dedicated To Duty

By Eric Ephraim Ene



R-L, ED HR, Barr. Ishaya Dodo, MD/CEO TCN, Engr. Dr. Sule Abdulaziz, ED TSP, Engr. Victor Adewunmi, and GM F&A, Mr. B.M Abdullahi

he Managing Director and Chief Executive Officer of the Transmission Company of Nigeria (TCN), Engr. Dr. Sule Abdulaziz has enjoined Regional Transmission Managers (RTM), under the Transmission Service Provider (TSP) Business Unit of TCN, to remain diligent and dedicated in the discharge of their duties.

The TCN helmsman who stated this during a Management Meeting held in February, 2023, at the Company's Corporate Headquarters in Abuja, charged the RTM's to sensitize regional staff, especially operators on the organisation's Service Level Agreement (SLA) and its consequences if a substation or line is out of service, noting that for the Company's revenue to improve, workers must be at their best always.

He remarked that TCN had made significant progress in various areas of operations since the last Management meeting, with the delivery of new transformers across its regional offices, completion of new transmission lines and other rehabilitation projects across the grid to enhance the Company's wheeling capacity.

On his part, the Executive Director, Transmission Service Provider (TSP), Engr. Victor Adewunmi, explained that the meeting was to enable Management review achievements and challenges of the previous year as well as plan for the next operating year.

Engr. Adewunmi further explained that every Region has a critical role to play in TCN's revenue generation even as he cautioned that the era of regions delaying maintenance was over.

In his words, "For every outage time, for every time the equipment is down, we are losing revenue because we signed Service Level Agreement (SLA) with the DisCos and GenCos. So, whatever is being generated, we must effectively deliver to the DisCos 100% without any loss".

He charged the regional heads to keep a keen eye on every TCN equipment as the smallest piece of equipment in the system that is neglected could cause big problems.

He lauded the efforts of all the regional heads on progress made especially in the area of system stability, noting that so far, in the year, only one system disturbance can be traced to TCN, and tasked them to challenge themselves to do better as all hands must be on deck this year to deliver more proactively on the company's mandate.

While presenting a paper on "TCN Performance Improvement Plan (PIP)", the General Manager, System Planning and Development, Engr. Kabiru M. Adamu emphasized the need for the Company to ensure that its five-year master plan was properly captured in the PIP.

He said that all the infrastructural investments TCN would be making in the next five years have been strategically planned to align with the distribution companies to address misalignment at transmission and distribution interface points which in the He emphasized that all the infrastructural investments TCN would be making in the next five years are strategically planned...

long run will enhance optimal network capacity and better service delivery.

The two-day meeting featured robust paper presentations, discussions and planning on the way forward for TCN.



Cross section of RTM's in Transmission Service Provider (TSP), during the meeting

Bauchi Region Takes Delivery Of 150MVA 330/132/33kV Transformer

The Bauchi Regional Office of TCN took delivery of a new 150MVA 330/132/33kV power transformer at its 330/132/33kV Transmission Substation, on 19th February 2023. The power transformer is one of the several transformers delivered to TCN substations nationwide, under the ongoing TCN-World Bank-funded projects. Upon installation, the new transformer will add 120MW to the 2x150MVA, 2x60MVA Bauchi 330/132/33kV Transmission Substation. With this development, the substation now has redundancy that can meet any increased power demand by Jos Electricity Distribution Company.



Arrival of the new 150MVA 330/132/33kV power transformer





Side views of the transformer

8 Truckloads Of Transformer Accessories Arrive Benin Region

The Benin Region of TCN has taken delivery of eight (8) truckloads of transformer accessories in its Benin 330/132/33kV Substation on 7th March, 2023.The transformer accessories are for the installation of two number 300MVA power transformers that will soon be delivered to the Benin 330/132/33kV Substation.



Arrival of the truck loads of transformer accessories at 330/132/33kV Benin Transmission Substation



Offloading of the accessories

Abuja Region Takes Delivery Of 100MVA Transformer And Accessories In katampe Substation

The Abuja Region of TCN, took delivery of a 100MVA power transformer and accessories at its Katampe 132/33kV Transmission Substation on 10th March 2023. On installation, the new 100MVA power transformer will replace one of the two 60MVA 132/33kV power transformers in the substation. This will increase the transformer capacity in the substation from 120MVA to 160MVA.



Arrival of the new 100MVA transformer and its accessories at Katampe 132/33kV Transmission Substation



Offloading of the transformer and its accessories

Installation Of New 100MVA Transformer in Birnin Kebbi

TCN has commenced the installation of the brand new 100MVA 132/33kV power transformer recently delivered to its Birnin Kebbi Substation in Kebbi State. The transformer, which is one of TCN-World Bank funded projects, has been placed on the plinth as part of the installation process.



Arrival of the new 100MVA 132/33kV power transformer at Birnin Kebbi 132/33kV Transmission Substation, Kebbi State



Ongoing installation of the 100MVVA power transformer at Birnin Kebbi 132/33kV Transmission Substation

Port-Harcourt Substation Takes Delivery of 100MVA Transformer and its Accessories

TCN, Port-Harcourt Region took delivery of 100MVA power transformer and accessories at its Port-Harcourt Mains 132/33kV Transmission Substation, Rivers State. On installation, the transformer will add 80MW to the capacity of the substation.



Arrival of the new 100MVA 132/33kV power transformer at Port-Harcourt Mains 132/33kV Transmission Substation, Rivers State



Side view of the new transformer

Benin Transmission Substation Takes Delivery Of Brand New 300MVA Power Transformer



Arrival of the new 300MVA power transformer at Benin 330/132/33kV Transmission Substation, Edo State



Side view of the new transformer

Enugu Region Takes Delivery Of Power Transformers And Transformer Oil

The Enugu Regional office of TCN, on 25th March, 2023, took delivery of a new 150MVA 330/132/33kV and 60MVA 132/33kV power transformers as well as a truck load of transformer oil at New Haven Transmission Substation, Enugu State. The new transformers are also part of the ongoing TCN/World Bank funded grid expansion projects. On installation, it will increase capacity of the substation by 120MW on 330kV level and 80MW on 132kV level in the New Haven Substation.



Arrival of the new 150MVA 330/132/33kV power transformer at New Haven Transmission Substation, Enugu State



The new 60MVA 132/33kV transformer



Truck load of transformer oil

Effurun Substation Receives 100MVA Power Transformer

TCN, Benin Region took delivery of a new 100MVA 132/33kV power transformer at its Effuru Transmission Substation in Delta State. The Effurun Substation had earlier received accessories for the new 100MVA transformer project, which is one of TCN – Japan International Corporation Agency (JICA) substation expansion projects. Upon installation, the capacity of the substation will increase from 60MVA to 160MVA with the capacity to transmit 96MW bulk electricity to Benin DisCo load centers taking supply from Effuru Substation.



The new 100MVA 132/33kV power transformer at Effurun Transmission Substation, Delta State.





The new transformer on plinth

Ugwuaji Substation Receives 60MVA Power Transformer And Accessories

TCN, Enugu Region recently took delivery of a new 60MVA 132/33kV power transformer and its accessories at its Ugwuaji Transmission Substation, Enugu State. The new 60MVA transformer project, which is part of TCN's rehabilitation and reinforcement projects funded by the World Bank, will upon completion, increase the capacity of the substation by 48MW.



Arrival of the new 60MVA transformer at Ugwuaji Transmission Substation, Enugu



Side view of the transformer



Transformer accessories

Photorama Ministry of Power



Honourable Minister of Power, Engr. Abubakar D. Aliyu, FNSE, attended the inauguration of the 50 megawatts (MW) Maiduguri emergency power project by President Muhammadu Buhari. The Maiduguri emergency power project is part of an incremental 4,000 MW of power generating assets that the Buhari administration embarked upon to improve national power supply and stimulate economic growth.



Minister of Power Engr. Abubakar D. Aliyu, FNSE, received the Ambassador of Egypt to Nigeria H.E. Ihab Awab. The meeting centered on commitment between the two countries to enhance bilateral cooperation in the areas of electricity and renewable energy.





Honourable Minister of Power, Engr. Abubakar D. Aliyu, FNSE, received a delegation from Sun Africa – an America backed leading Utility-Scale Solar project developer and off-grid solution provider. The Sun Africa team was led by Dr. Gabin Koucoi. The meeting held at the Minister's Conference room where the Minister renewed the commitment of Nigerian Government to supporting initiatives to increase and expand utility renewable energy options in Nigeria.

Photorama



Chairman and members of the IBB International Golf & Country Club paid a courtesy visit to TCN to discuss preparations for the 2023 Captains Cup in Abuja as well as areas of collaboration with TCN.





GM (Technical), Benin Region, Engr. I. C. Okpe paid a courtesy visit to the new Managing Director of Benin DisCo, to discuss interface projects and other areas of collaboration that would further enhance TCN seamless delivery of quality bulk electricity to distribution load centers in Delta, Ondo, and Ekiti States.



TCN in a project kick-off meeting with its contractor on the Construction of Design, Manufacture, & Supply of 50KM 132kV Ikere-(Ado) Ekiti-Ijesha Isu Ekiti-Ilupeju Ekiti Double Circuit transmission line.

Photorama



TCN's System Operations team in Abuja Region, led by the Regional Operations Manager (ROM), Engr. Thomas Oladeji Ojo, met with AEDC, to discuss modalities for a more effective and efficient communication with emphasis on the use of VHF radio in line with the Service Level Agreement (SLA). The meeting which is held quarterly, is an avenue for continued interaction between the TCN SCADA Communications Unit in Abuja Region, and AEDC's Dispatch Unit, to ensure seamless service delivery to electricity customers within AEDCs franchise area.



Kano Region with representatives of the Société Nigérienne d'Electricité, Nigerien Electricity Society (NIGELEC). The meeting served as an avenue for continued interaction between TCN and NIGELEC.



Participants at a recently concluded Pre-retirement training course.



Training on Managing Human resource in the Digital ERA.

POTPURRI



Engr. Ernest Asuzu, Regional Transmission Manager, Shiroro, on his conferment as Fellow, Nigerian Society of Engineers (FNSE)



Right; Regional Transmission Manager, Kaduna Region, Engr. Aminu Haruna, received the prestigious symbol of hope on project management award for qualitative leadership which positively impacts the lives and wellbeing of the society



TCN-APO Chapter of the National Union of Electricity Employees (NUEE), conferred Award of Excellence to some staff of the Region and its Executives

Tower Vandalism: NSCDC, Vigilante Arrest Three Suspects In Katsina State

By Nasir Tahir



One of the apprehended suspects

he Nigerian Security and Civil Defence Corps (NSCDC) and a community vigilante group have arrested three suspects at different locations in Katsina State for alleged involvement in the vandalisation of transmission towers.

Two suspects were arrested at Sharifawa village by a community vigilante on 16th January, 2023, for vandalizing Tower 238 (T238), while the NSCDC apprehended another vandal for destroying Tower 253 (T253) in Ganga-Gari Village, Daura Town.

The suspects who were charged to court have been remanded in prison custody pending their trial.

This development is coming as a huge relief to the Katsina Sub-Region, under the Kaduna Region of TCN, which has suffered several cases of vandalism of transmission infrastructure. The arrest of these vandals is not unconnected to the recent appeal by the Management of TCN to security agencies, to beef up surveillance around transmission infrastructures across the country.

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SUBSTATION

KNOW YOUR SUBSTATIONS

NKALAGU 132/33kV TRANSMISSION SUBSTATION

he need to supply bulk power to the then Nkalagu Cement Company (NIGERCEM) and nearby communities, led to the creation of a 132kV transmission substation in Nkalagu, Ishielu Local Government Area of Ebonyi State.

The Nkalagu 132/33kV Transmission Substation is located in the NIGERCEM area of Nkalagu, Ebonyi State. The substation which was built in 1977 by SADELMI Power, Italy and energised in 1978, was funded by the Federal Government.

Commissioned in 1981 under the defunct NEPA, the Nkalagu Substation had an initial capacity of $2x30MVA \ 132/33kV$ power transformer.

Presently, the capacity of the substation has increased with the installation of a 60MVA 132/33kV transformer, with 2No. 33kV feeders. TCN has also expanded the Switchyard and created 2 new 132kV line bay for the newly constructed Nkalagu - Abakiliki 132kV Double circuit line.

The substation receives supply from 132/33kV transmission line from New Haven 132kV Transmission Substation, which it supplies in bulk to Enugu Electricity Distribution Company (EEDC), for onward distribution to its customers in Afikpo North & South, Oburu, as well as Amasiri in Ebonyi State.

Further more, the 132kV Substation at Abakiliki, Ebonyi State capital also takes supply from Nkalagu Transmission Substation.

TCN MARKET OPERATOR ON REVENUE DRIVE

Engr Dr. E. A. Eje, Market Operator, TCN

he Nigeria Electricity Supply Industry is governed by Market Rules which are absolutely necessary for the smooth operation, viability and sustainability of the sector. These rules are voluntarily signed by all Market Participants – Generators, Transmission, Distribution and Eligible Customers – after being licensed by the Nigerian Electricity Regulatory Commission (NERC). The Administrator of the Market Rules is the Market Operator (MO) – Engr Dr. Edmund Eje under the administrative oversight of the TCN.

The custodian of all Contracts operating in NESI and all energy traded in NESI is bulk-metered, audited and accounted for by MO and monthly invoices given to all Participants including the Nigeria Bulk Electricity Trading (NBET). For revenue collection, the MO is only in-charge of collecting Service Charges for TCN (TSP-SO-MO-Ancillary Charges), NERC and NBET.

TCN operates on self-sustenance basis, it depends mainly on its Internally Generated Revenue (IGR) for its overheads and most of its major projects. The Revenue of TCN is not crafted on cost-reflective tariff basis like the other participants in NESI, reason being that the Federal Government uses TCN to subsidize the NESI operations. The non-cost-reflective tariff which the Regulator allowed TCN to recover is not being paid in full by the Market Participants, leading to funding deficit for the TCN. If TCN fails as a result of paucity of funds, no Market Participant would be functional and the NESI would crumble.

The Transitional Electricity Market commenced in February, 2015 with, among other preconditions for the Participants, posting adequate Bank Guarantees and paying their monthly invoices 100%. As at December 2019, the outstanding on MO's services invoice stood at N443b with interest. This figure may have been traded for DisCos credit on Tariff-Gap, reason being that the Service Providers belong to the Federal Government. From January 2020 to date, the MO invoice outstanding stood at N80b. It is becoming very difficult for TCN and other service providers to function properly because of poor revenue receipt.

Given the above, the MO commenced revenue - drive since last year but the defaulters have been unable to cure their debt, despite notices. Revenue drive procedure in NESI is well streamlined and no arbitrary process is adopted. The process is very well spelt out under the Market Participation Agreement signed by all market-participant. The major default here is failure to put up a valid Bank Guarantee (BG) and also failing to clear outstanding debts with MO.

- On the 16th of February, 2022, defaulters, were notified to put up their BG or validate as the case may be;

- On 2nd March 2022, defaulters, were served with "Notice of Event of Default".

- On the 9th of May 2022, defaulters, were served "Notice of Intent to Issue Suspension Order".

- Between May and October 2022, (8 defaulters applied for "Hearing" in line with the Market Rules to reconcile their accounts and offer reasons for their inability to pay and ask for time.

Finally, on the 21st of March, 2023, the Market Operator went to Press (on 3No Daily Newspapers) to notify all defaulters to fix their default within 14 business days or face Suspension from the Market. Suspension goes with complete disconnection or partial disconnection of the defaulter from the grid. It is the prerogative of the MO to carry out this sanction in batches to give room for the defaulters to approach MO for remedy in line with the Market Rules.

Many other defaulters have been scheduled for similar sanctions should they fail to fix their default. The MO did not demand anything outside the Market Agreement they voluntarily signed. Note that Distribution companies also embarked on load disconnection during their revenue drive. Investors should not use trust collected on behalf of the Market, to settle their bank loans and render other operators in the value-chain ineffective due to poor remittance.

NESI Market indiscipline is one of the major factors dealing a disastrous blow to the growth and sustainability of the Market. It is important to note that until the Market Rules are derogated, the MO will continue to apply them for the stability of the Market. Stakeholders should be sensitive to the real issue, which

is efficiency and survival of the NESI.

For clarity, below is a summary of the suspension procedures in the market:

1. Notification of Non-Compliance: When a participant violates the Market Rules or fails to pay the Market Operator invoices. The Market Operator will first notify the Participant in writing, specifying the violation and requesting that corrective action be taken within a specified period.

2. Notice of Intention to Suspend:

If the Participant fails to comply with the above notice, the Market Operator may issue a Suspension Order to suspend a participant. This notice will specify the reasons for the suspension, the proposed duration of the suspension (30 days), the attendant consequences (Load Disconnection) and the conditions for lifting the suspension.

3. Opportunity to Respond:

The Participant will be allowed to respond to the intention to suspend (Hearing) and provide reasons why the suspension should not be imposed.

4. Notice of Suspension:

If the participant still fails to comply with the "Notice of Intention to Suspend', the Market Operator may issue a ' Suspension Order', which will last for 30 business days after which the MO can escalate the suspension to the Commission for the Business Continuity Regulation to click in. Within this Suspension period of 30 days, the MO may completely or partially disconnect the defaulters from its point of connection to the grid.

5. Application for Reinstatement:

After the suspension period, the participant may apply for reinstatement by providing evidence of compliance with the Market Rules and any other conditions specified in the 'Notice of Suspension'. The Market Operator will review the application and make a determination on whether to lift the suspension or not.

Note: We advise that defaulters should follow due diligence to fix their default as against destabilizing the NESI. The Federal Government had done so well in the past through various NESI interventions which have run into trillions of naira.



FOCUS ON

Kano Region



Kano Regional Office

Coverage Area

The Kano Region of Transmission Company of Nigeria (TCN) was carved out of the old Kaduna Region in June 2021, to address the rapidly growing load demand in Kano, Katsina and Jigawa States.

The Region delivers bulk electricity to three states of Northwest Nigeria, namely Kano, Katsina, and Jigawa States. It interfaces with Kano Electricity Distribution Company (KEDCO), whose franchise area includes Kano, Katsina, and Jigawa and Jos Electricity Distribution Company (JEDC) which covers Azare in Bauchi State, Nguru in Yobe State as well as Gazaoua in Niger Republic.

The Region is further broken into three Sub-Regions, namely Kano, Katsina, and Dutse and has one 330kV transmission line, eight 132kV transmission lines, 15 transmission substations with capacity of 4x150MVA at 330/132/33kV level and 29 power transformers in 132/33kV transmission substations.

Staff Strength

Kano Region is being managed by Bashir Mohammed Gote, as the Regional Transmission Manager (RTM), and Bernard Ochuko Ogagarworia, as the Regional Operations Manager (ROM) with a total number of 582 staff.

Projects

Kano Region is witnessing rapid development in transmission infrastructure, ranging from the new office blocks in all subregions, new substations such as the 2x150MVA 330/132/33kV and 2x60MVA 132/33kV substation in Rimin Zakara and Katsina. TCN also installed a 1/30MVA 132/33kV substation in Bichi to further boost bulk capacity in the Region.

The Region also has many ongoing projects such as the installation of 300MVA 330/132/33 kV power transformer in Kumbotso, Kano; installation of 2x60MVA 132/33kV power transformer with its line bay in Kankia, Katsina; and replacement of 7.5MVA with 60MVA 132/33kV power transformer in Hadejia, Jigawa State. Some of the other projects are listed in the tables below:

COMPLETED PROJECTS		
Location	Projects	
Bichi	Installation of 20/30MVA 132/33kV Substation	
	Construction of 1.2km access road and drainage from Bichi Substation to Kano–Katsina Ex- pressway	
	Graveling/chain-link work at Bichi Substation	
Kumbotso	Construction of regional office block	
Dutse, Jigawa	Construction Sub-Region Office Block	
Katsina	Construction Sub-Regions office block	
Rimin Zakara	Construction of 2x150MVA 330/132/33kV and 2x60MVA 132/33kV Substation.	

Other ongoing as well as proposed projects within the Region include:

PROPOSED PROJECTS		
Location	Projects	
Dangwauro, Kano	Construction of 2x60MVA 132/33kV Substation	
Jogana, Kano	Construction of 2x150MVA 330/132/33kV substation	
Daura, Katsina	Construction of 2x150MVA 330/132/33kV substation	
Hadejia and Katsina	Reconductoring of 132kV Line Hadejia, and katsina line1	
Kano	Reconductoring of 132kV Kumbotso-Dakata Line	
	Reconstruction of kumbotso – Dan agundi 132kV line	
Gwaram, Jigawa	Construction of 2x60MVA 132/33kV substation	
Birnin Kudu, Jigawa	Construction of 2x60MVA 132/33kV substation	
Kazaure, Jigawa	Construction of 2x60MVA 132/33kV substation.	
Babura, Jigawa	Construction of 2x60MVA 132/33kV substation	
Mashi, Katsina	Construction of 2x60MVA 132/33kV substation	

Every test in our life makes us Bitter or Better Every problem comes to Break or Make us The choice is ours whether we become VICTIM or VICTOR

ONGOING PROJECTS		
Location	Projects	
Kumbotso, Kano	Construction Sub-Region Office Block	
	Relocation of 75MVAR 330kV Shunt Reactor to new bay	
	Replacement of 20/30MVA Mobile transformer with 100MVA	
	Installation of 150MVA 330/1332/33 kV power transformer	
Dakata Substation, Kano	Construction/Installation of Dakata and Hadejia line bay	
Hadejia, Jigawa	Replacement of 7.5MVA with 60MVA 132/33kV Power Transformer.	
Hotoro, Kano Walalembe	Construction of Walalambe 132/33kV 2x40MVA Sub-station	
Jama'are, Bauchi	Installation of 40MVA 132/33KV Mobile Power transformer	
Kankia substation	Instalation of 2x60MVA 132/33kV power transformer with its line bay.	
Katsina	Construction of 2x150MVA 330/132/33kV and 2x60MVA 132/33kV Substation	
Kumbotso. Dakata, and Dan Agundi Substations	Installation of 100MVA 132/33kV power transformer with it line bay and control room extension	
Kano and Katsina	Construction of Kano-katsina 330kV line	
Danbatta, Kano	Construction of 2x60MVA 132/33kv substation	
Bichi, Kano	Construction of 2x60MVA 132/33kV substation	
Kanyi, Kano	Construction of 2x60MVA 132/33kV substation	
Dangwauro, Kano	Construction of 2x60MVA 132/33kV substation	
Kankara, Katsina	Construction of 2x60MVA 132/33kV transmission	
Malumfashi, Katsina	Construction of 2x60MVA 132/33kV substation	
Dutsimma, Katsina	Construction of 2x60MVA 132/33KV substation.	
Kumbotso, Kano	Construction of 330kV line Kumbotso to Rimin zakara to katsina	
Kumbotso, Kano	Construction of 330kV from kaduna to Rimin zakara transmission line	
Kumbotso, Kano	Replacement of 150MVA old power T2A transformer with 300MVA power transformer	

Challenges

Like other regional offices, Kano Region is faced with some intactable challenges, the most prevalent being:

Encroachment

Encroachment affects TCN's Right of Way (RoW). Kano State's booming population has given rise to increasing cases of buildings and construction works in direct violation of TCN's RoW. The affected locations include Kano-Kankia 132kV Line I, Kano-Kano-Kankia 132 kV Line II, Kumbotso-Dan'agundi 132kV Line, Kumbotso-Dakata 132kV Line, Kano-Zaria 132kV Line, and Kano-Mando 330kV Line.

In a bid to address this challenge, TCN set up a committee on Monitoring and Reduction of Encroachment on its Right of Way (RoW). The Committee paid a visit to Kano Region to assess the extent of encroachment and met with relevant authorities and stakeholders, including Kano Urban Planning and Development Authority (KNUPDA), Kano Police Command, Department of State Security (DSS), and Nigerian Security and Civil Defence Corps (NSCDC) to strategize with them on ways to curb RoW encroachment. The Committee also organized sensitization campaigns to enlighten the public on the hazards of building close to, or under TCN infrastructure.

Excavation

The incidence of sand excavation close to TCN towers is another major challenge. Excavation work was recently spotted by TCN team in Tamburawa, Kano, along the 132/33kV Kumbotso-Dutse line by towers T39 – T41. Management of the Region, in collaboration with relevant authorities, dealt with the culprits and took measures to ensure such damaging activities are prevented in that vicinity.

Vandalism

Several cases of vandalisation of TCN infrastructure, in the Region has led to power outages. Recent cases of vandalism affected TCN towers along 132kV Zaria-Kano line and the 132kV Kano-Hadejia line, precisely towers T80 – T84, T139 – T144, and T161. The Region has taken deterrent measures which have led to the arrest of some violators.



Engr. Bashir Muhammad Gote, RTM, Kano Region



Engr. Bernard Ochuko Ogagarworia, ROM, Kano Region

Insecurity

This remains a recurring threat which negatively impacts the day-to-day operations of the Region as some locations have been inaccessible due to banditry and kidnapping. Cases of insecurity have hindered some projects in parts of Katsina State in locations such as Kankara and Kankia and also parts of Jigawa and Kano States. The Region procures the services of security agencies while working in these locations.

The above challenges notwithstanding, it is gratifying to note that TCN has continued to deliver more projects in the Region in line with its grid expansion goal.

YOU LEARN NOTHING FROM LIFE IF YOU THINK YOU ARE RIGHT ALL THE TIME


Voulez-vous apprendre le français?

Do You Want to learn French?

ENGLISH

FRENCH

French Internet Vocabulary II

to search the email the chat the message the draft the emoticon the email address to write to open the attachment to send the social media to sign up to log in the member the password popular the forum the community the network to follow Mouse pad Database Button Search engine Scroll bar Web Blog Wifi Modem Driver

- rechercher - l'e-mail - le chat - le message - le brouillon - l'émoticône - l'adresse e-mail - écrire - ouvrir - la pièce jointe - envoyer - les médias sociaux - s'inscrire - se connecter - le membre - le mot de passe - populaire - le forum - la communauté - le réseau - suivre - un tapis de souris - une base de données -un bouton - un moteur de recherche - une barre de defilement - Le web - un blog - le or la WiFi - le modem -le driver

Sober Musings



A n elderly woman had two large pots, each hung on the end of a pole which she carried across her neck. One of the pots had a crack in it while the other pot was perfect and always delivered a full portion of water. At the end of the long walks from the stream to the house, the cracked pot arrived only half full.

For full two years, this went on daily, with the woman bringing home only one and a half pots of water.

Of course, the perfect pot was proud of its accomplishments. But the poor cracked pot was ashamed of its own imperfection, and miserable that it could only do half of what it had been made to do.

After two years of what it perceived to be bitter failure, it spoke to the woman one day by the stream. 'I am ashamed of myself, because this crack in my side causes water to leak out all the way back to your house.'

The old woman smiled, 'Did you notice that there are flowers on your side of the path, but none on the other pot's side?' 'That's because I have always known about your flaw, so I planted flower seeds on your side of the path, and every day while we walk back, you water them.' For two years I have been able to pick these beautiful flowers to decorate the table. Without you being just the way you are, there would not be this beauty to grace the house.'

Moral: Each of us has our own unique flaw. But it's the cracks and flaws we each have that make our lives together so very interesting and rewarding. Please appreciate every individual as unique with something different to offer.

Culled from the net

Bridging Electricity Gap In Abuja and Environs

By Stella Ejikonye



Ongoing 3X60MVA, 132/33kV transmission substation at Kuje and 2x60MVA, 132/33kV transmission substation at Wumba, Abuja

Lectricity is regarded as the most important input for economic development globally. For businesses to grow and government to function optimally in terms of formulating and implementing far-reaching policies, the importance of clean and sustainable power supply cannot be overemphasized.

It's an open secret that there have been improvements in public power supply across the country. This development, however, is not unconnected to the relentless efforts and investment by TCN over the years in critical infrastructure, man power training, amongst others.

While TCN is not directly involved in power distribution to Nigerians, it functions as the middleman between the generation and distribution companies. When the generation companies generate electricity, it is the responsibility of TCN to wheel the generated power to the load centers of distribution companies who then feed the final consumers. To readily achieve the task of transmitting bulk electricity in a more efficient and effective manner, the company is investing hugely in transformers and substations upgrade, procurement of new transformers and accessories, construction of new substations as well as re-conductoring of new transmission lines.

In Abuja for instance, TCN, through its nationwide ongoing grid Rehabilitation and Expansion Programme, is leaving no stone unturned in its efforts to bridge electricity gap in the city and its environs. The prompt response in terms of rehabilitating or replacing failing infrastructures have been phenomenal.

Recently, in Apo Sub-region, a 45MVA transformer affected by fire incident was replaced with a higher capacity 60MVA which was installed within a few days. The Apo Sub-Region Substation, was made up of existing 2x100MVA, and 45MVA, 132/33kV transformers. The new 60MVA transformer was installed to further expand the substation's capacity.



Construction of 2x150MVA, 330kV Hybrid substation at West Main (Lugbe) with 2x330kV line bays including 3x60MVA, 132/33kV and 4x132kV line bays GIS and 33kV metal clad. The 240MW substation is over 60% complete.

 Construction of 3x6OMVA, 132/33kV Kuje Substation with 2x132kV line bays at Wumba/Lokogoma, plus 5km 132kV underground XLPE cable from New Apo Substation to Wumba/Lokogoma Substation. The 240MW substation is 93.5% completed.

 Construction of 96MW, 2x60MVA, 132/33kV GIS substation at Gwarimpa (Dawaki), including laying of 1km 132kV underground XPLE cable. This substation is

At the Katampe Substation, a 60MVA transformer was upgraded to 100MVA with some accessories earlier on in the year.

Similarly, a new substation was built in Lafia-Akwanga axis to improve bulk transmission. Last year President Muhammadu Buhari, commissioned the new 330/132/33kV substation which has contributed to improved power supply in the area. The substation is equipped with two units of 150MVA and two units of 60MVA trasformers.

In the same vein, TCN has completed a 2x6OMVA,132/33kV substation at Kabba, to service Kabba – Lokoja – Ajaokuta axis even as work on the construction of the transmission line that will connect the substation to the national grid is ongoing.

In addition, TCN is reinforcing its High Voltage Ring around Abuja codenamed the "Abuja Feeding Scheme Project". The scheme includes:

 143km Lafia – New Apo (pigba) 330kV DC line which will add 1,147MW to the grid and is currently over 70% completed.

 11km New Apo (pigba) – Old Apo, 42km New Apo – Kuje and 28km Kuje – West Main (Lugbe) 132kV double circuit transmission lines will add about 318MW lines capacity in Abuja. This is at 65% completion.

• Construction of 2x150MVA, 330/132/33kV substation at New Apo with line bay extensions at Lafia and Old Apo Substations. The 240MW capacity substation is over 79.2% complete. 100% completed and has been energized and connected to the national grid.

On completion and energizing of all the projects under the Abuja Feeding Scheme, a total of 1,465MW wheeling capacity will be added to the transmission grid. This means that the Federal Capital and environs will have enough bulk electricity for AEDC to off-take to its customers in Abuja for the next 50 years in line with the project design.

TCN is repeating the same feat nationwide within the ten (10) regions of the Company. This is in line with its goal of providing efficient and effective bulk power to Distribution load centers nationwide and its international customers.



100MVA transformer recently delivered at 132/33kV Katampe Transmission Substation

Understanding The Role Of PC&M In TCN

By Maimuna Isah-Ladan



TCN engineers carrying out maintenance work at Mando 330/132/33kV Substation Switchyard

Different divisions and departments all play very unique roles necessary for the efficient functioning of TCN. Each of these components are distinctive in their functions. The Protection, Control and Metering Department, also referred to as PC& M is one of such departments.

The PC&M is a department under the Transmission Service Provider (TSP) Business unit of TCN. The department is saddled with the responsibilities of ensuring system security, stability and reliability through the systematic, strategic and timely isolation of faulty portions of the network system in order to safeguard system equipment within and outside the switchyard or substation and ultimately avert system disturbance.

In a recent interview, the Principal Manager, Transmission, Kaduna Region, Engr. Ahmed Usman, explained that within the scope of TCN, transmission lines, circuit breakers, isolators, transformers and bus-bars are all parts of the transmission grid. He explained that the loss of any of these equipment can cause a reduction in TCN's wheeling capacity and invariably cause the company not to effectively and efficiently discharge its mandate of transmitting all generated power from the generating stations to distribution load centers across the country.

The responsibility of the PC&M Department therefore, is to ensure the protection of equipment from damage due to faults that can be detected and controlled or remedied, to enhance efficient and adequate delivery of power.

Various protection schemes are deployed to safeguard equipment, depending on its type. In general, protection schemes are mainly categorised into main, back-up, and auxiliary protection.

Main protection serves as the first line of action during a fault condition. In a situation where the main protection fails, backup protection is activated to provide adequate and reliable protection. The Auxiliary protection on the other hand, is peculiar to power transformers, and keeps the efficiency of the equipment.

In the case of power transformers, the main protections deployed are; Differential, Restricted Earth Fault Protection (REF), Buchholz, Oil and winding temperature (OTI & WTI) protection. Back-up protection consists of: Overcurrent (O/C), and Standby Earth-fault protection (SBEF). Pressure Relief (PRV) while Sudden Pressure Relief protection (SPR) make up auxiliary protection.

For lines, the main protection is the Line Differential and Distance Protection, while its back-up is the Overcurrent and Earth fault protections. On the other hand, the main protection for the bus-bar is the bus-bar differential protection and the back-up is the overcurrent protection.

In order to effectively use all these, full knowledge of the different types and make of relays are paramount. Some of the

relays commonly used by PC&M engineers are MICOM, SEL, ABB, NARI, SIEMENS, SEPAM, ALSTOM, SCHNEIDER, etc. All the protective relays / devices are sometimes identified by their standard device numbers courtesy of American National Standard Institute (AMSI) and Institute of Electrical and Electronic Engineering (IEEE).

In an interview with PC& M Engineers, Engr. Shefiu Ibrahim, Engr. Abdulkarim Zakariyya and Ibrahim Ma'aji, while they were installing a brand new circuit breaker recently in Mando 330/132/33kV Substation, Kano, they revealed that testing and confirmation assessment of the equipment before being put into first time use or after a failure was one of the top responsibilities of a PC& M engineer.

According to the trio, a PC&M Engineer is exposed to the technical know-how of sophisticated test equipment like the Omicron Test kit, Megger test kits, among others. The PC&M engineer is responsible for the control of the substation in matters relating to circuit breaker, isolator, transformer cooling system, etc. as well as metering of power, voltage, and current coming in and out of the substation.



PC&M engineers working at Mando 330/132/33kV switchyard

PIP Committee Meets DisCos, Discusses Areas Of Synergy

By Stella Ejikonye & Tosin Olasehinde

ollowing the approval of Transmission Company of Nigeria's five-year Performance Improvement Plan (PIP), by the Nigeria Electricity Regulatory Commission, (NERC), a committee set-up to interface with stakeholders recently held a consultative meeting with representatives of the eleven Distribution Companies (DisCos) in Lagos and Abuja, respectively.

Chairman of the Committee, who is also the General Manager, System Planning and Development, Engr. Kabiru Adamu, said the meeting was called to discuss NERC requirements and expectations as well as ways of achieving alignment with parties involved in terms of investment and projects time-line.

Adamu stated that the 5-year PIP forecast covering 2023–2027, is to enable TCN invest properly towards a significant improvement in grid performance, reliability and security as well as reduce significant system losses.

According to him, the plan will among other things, help to maintain efficient dispatch of generated electricity throughout the value chain, as well as ensure safety of the transmission infrastructure and system automation in the Nigerian Electricity Supply Industry (NESI).

He further stressed that, "alignment across the three segments of the value chain was absolutely important, irrespective of the performance of each of the segments individually. If there is no



PIP Committee with Benin DisCo

alignment in terms of how the operation is streamlined, electricity users are going to suffer because any misalignment has a negative impact on the quality of service to be delivered to Nigerians."

During the engagement, the Eleven (11) Distribution Companies were made to understand the goal of the PPI, with emphasis on the need for their buy-in, necessary to ensure that the requisite alignment is achieved. The guidelines, and areas they need to work on, and importantly, the need for feedback to TCN to enable it harmonise and put final alignment in place that would help the Committee establish a five-year performance improvement plan across the value chain.

Below are picture excerpts with the 11 different DisCos:



Kaduna DisCo



Eko DisCo



Jos DisCo



Yola DisCo



Port-Harcourt DisCo



Abuja DisCo



Ibadan DisCo



Enugu DisCo



Ikeja DisCo



Kano DisCo

BEVIGILANT



STOP THE VANDALS BEFORE THEY STOP US

This is a call to national duty!

Vandals are on the rampage and making life difficult for all. Each time they strike on our equipment and facilities and damage or steal them, they cause untold hardship to Nigerians. Often your comfort is tuned into one bleak desolation. We must stop them, now!

You can assist TCN to fight vandalisation and other illegal activities by being extra vigilant

- * Don't destroy or aid others to steal or spoil Tower cables
- * Don't carry out illegal connections

TCN NIGERIA

- * Stop bush burning near transmission facilities
- * Don't tamper with or steal transformers

0

Let's work together to reach the set objective for a significant improvement in power supply, nationwide. We all owe this nation a DUTY

TCN ..transmitting bulk electricity in the most efficient and effective manner



PPI Team Inspects Site For Mobile Substation In Enugu

By Mary Phillip Udom



Members of Presidential Power Initiative and staff of Enugu Region of TCN, and EEDC at the site earmarked for the installation of a mobile substation in Enugu

ollowing the recent commencement of implementation of the Nigeria-German Siemens Power Agreement, the Presidential Power Initiative (PPI), on Thursday March 16, 2023, visited the Nike Lake area in Enugu State to inspect the site earmarked for the installation of a mobile substation.

Recall that the Federal Government had announced that the country was billed to take delivery of twenty-two power transformers and mobile substations between October 2022

and May 2023.

Speaking during the visit, the PPI Team lead, Engr. Geoffrey Nwokoye, stated that Enugu was one of the states selected to benefit from the pilot phase of the project, noting that the Siemens deal was a game changer in the power sector and when fully implemented, would address the perennial power challenges bedeviling the country.

Reacting, the Assistant General Manager (Transmission), Enugu Sub region, Engr. Charles Iwuamadi, assured the PPI team of unflinching support towards the actualisation of the project which when completed, will ensure stable electricity supply to Nike Lake Resort and its environs.

On his part, the Head of Operations, Enugu Electricity Distribution Company (EEDC), Engr. Stanley Onwuzuruike, said that all arrangements had been made to enable EEDC utilize the additional bulk power supply and expressed the hope that the project would become a reality soon.

He assured that as soon as the project was completed, EEDC would promptly evacuate available power from the mobile substation to the public.



Group photograph of PPI, TCN and EEDC team after site inspection to Nike Lake Area, Enugu

TCN Organises 2-day Regulatory Awareness Workshop For Staff



GM, Regulations and Compliance, Mr. Ali Bukar making a presentation during the workshop

he Transmission Company of Nigeria (TCN), has organised a two-day Regulatory and Compliance Awareness / workshop for its staff nationwide.

Speaking at the opening ceremony in Abuja, the General Manager, Regulations and Compliance Department of TCN, Mr. Ali Bukar said that the workshop was geared towards acquainting and expanding staff knowledge on the rules and regulations guiding the Nigerian Electricity Supply Industry (NESI), and specifically TCN and its technical and commercial inter-operational dependance with other stakeholders

Bukar who said that the workshop was the first ever nationwide and no-one-should-be-left-behind regulatory event organised by the Company since the privatisation of the power sector, maintained that a lot of regulations have changed, necessitating a forum where staff will be brought up to speed with the changes guiding their regulatory responsibilities and obligation.

He said the expectation of Management was to get TCN staff well acquainted with operational, technical and commercial safety and existing laws in order to reduce the risk of sanction by regulatory authorities for breach of compliance rules, improve IGR and system reliability margin.

While giving an overview of the workshop, he explained that

for the power system to successfully operate, it requires harmonious relationship and teamwork among departments responsible for technical/electrical (maintenance), operational (System control), commercial (market operation), Regulatory (laws to be obeyed), and institutional arrangement (policies).

To ensure the goal of the awareness programme is achieved, Engr. Bukar noted that the forum will make sure that participants imbibe the regulatory compliance and benchmark as against the normal way of doing things; develop and implement risk based compliance tools to help establish an appropriate compliance culture within TCN; evaluate the new regulation that came up in the value chain just within a space of six months and how they affect TCN; and advise as well as assist the staff to establish a

regulatory relationship and bond within TCN business units.

The programme which has so far been held in Abuja, Lagos, Kaduna and Osogbo Regional offices of TCN, will be replicated across all TCN regions in the country.

Abuja Region

In continuation of the awareness programme, the Regional Operation Manager (RTM), Abuja, Engr. Ali Sharifai enjoined participants to actively participate during the workshop so as to fully comprehend all the relevant regulatory requirements, noting that Management had provided them with knowledgeable and experienced facilitators.

He urged participants to ensure strict compliance with the rules governing their operations. According to him, complying with regulatory provisions is vital and that ignorance is not acceptable and not an excuse for any breach of law.

Lagos Region

In a related development in Lagos, the RTM, Lagos, Engr. Mojeed Akintola, in his opening remarks said that the exercise was timely as workers will be exposed to existing and new laws governing the sector. He expressed elation that the department came up with the workshop so that staff will be aware of actions that are sanctionable by the regulatory bodies. He added that the workshop will be an eye opener for staff to know what is right and wrong as most staff are ignorant of these regulations.

Staff in the region were lectured on various topics ranging from transition from regulated to deregulated system, industry/ruling documents, practical application from theory to implementation and amendment procedures, post deregulated system administration procedure and governance structures, various agreements signed by TCN and associated risk management to avoid sanction and liquidated damages, default notice, reporting procedures in NESI statutory and regulatory reporting compliance, new regulatory development in NESI, among others.

Osogbo Region

The General Manager (NCC) Osogbo, Engr. Balarabe Abdullahi, who declared the workshop open in Osogbo Region, said the training is timely and in response to the recent concern raised by Nigeria Electricity Stakeholder Industry (NESI) over the inadequate level of regulatory compliance by its members regarding operations and some other duties.

He said "The role played by TCN is so vital to the success of the power industry in Nigeria. TCN provides direct services to generators and distributors, indirect services to NERC and other key holders in NESI and is therefore in a special position to influence the quality of service provided to customers and initiate service standards of the industry."

He assured participants that the workshop would discuss these shortcomings and provide solutions and guidance so that they can be corrected promptly. He admonished participants to utilize the knowledge acquired during the workshop for the betterment of the sector.

Kaduna Region

The program which took place at the conference hall of Kaduna Regional office from 28th – 29th March 2023, had 20 staff in attendance, drawn from various departments in the Region.

A 5-man committee was set up to come up with a comprehensive commuique on recommendations and way forward. Some of the recommendations were; that new staff should receive vigorous and adequate training before proceeding to the field; holding sensitization workshops more frequently so that staff who were not opportuned to be trained in the previous training can benefit from subsequent training and that TCN should seek additional means of generating revenue so that the internally generated revenue can be sustainable, among others.



Participants in Osogbo Region



Participants in Lagos Region



Participants in Abuja Region



Participants in Kaduna Region

The 2-day sensitisation workshop witnessed several peresentations from TCN in-house facilitators.

MD Lauds Public Affairs Division,pledges More Support

By Uloma Osuagwu

he Public Affairs Division of Transmission Company of Nigeria (TCN), has been commended for its professionalism and efforts in building and maintaining a positive public image for the Company.

Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Abdulaziz who said this while declaring open, a four-day Public Affairs Conference with the theme, 'Public Relations in Today's Digital Environment', held recently in Abuja, pledged to continue to support the Division to achieve more positive results in discharging their core function.

Abdulaziz, who was represented by the Executive Director, Transmission Service Provider (TSP), Engr. Victor Adewunmi, urged the Division to maintain the tempo until the old narrative about TCN was changed, in order to give the Company the competitive edge required to maintain its leading position into the future.

Speaking on the theme, the MD expressed optimism that at the end of the Conference, participants would be more equipped for higher performance. While acknowledging the challenges faced by the Division, he stressed the need for the Division to up its game and ensure more involvement in engineering issues and meetings for better reportage of technical and sectorial issues.

In his address, the Executive Director, Independent Service Provider (ISO), Engr. Mamman Lawal, urged participants to keep a keen eye on worthy news items and avoid unhealthy competition which does not augur well for professionalism.

He sued for timely and professional news reporting of TCN programmes and activities in order to maintain the confidence of the internal and external publics of TCN.

Earlier, the General Manager, (Public Affairs) Division, Mrs. Ndidi Mbah, in her welcome address, said the Conference was aimed at bridging skill gaps and bringing new employees in the Division up to speed with best practice in the industry.

She concluded by stating that the Conference also provided the Division and its staff an avenue for self-assessment to enable a proper evaluation of the gains and areas of improvement, as well as a platform to enhance staff commitment to protecting and projecting the image of TCN in a professional manner.



Participants at the four-day Public Affairs conference in Abuja

TCN To Complete Installation Of Three New Power Transformers In Osogbo

By Omideji Oluwakayode



2nd Right, Engr. Mahmud Suleiman, Regional Transmission Manager, Osogbo

s part of ongoing nationwide efforts to further expand its wheeling capacity, the Transmission Company of Nigeria, (TCN) is set to complete the installation of three new power transformers at its Osogbo Transmission Substation.

General Manager (Transmission), Osogbo Region, Engr.. Mahmud Suleiman, who stated this in a recent interview, disclosed that the new power transformers include a 330MVA 330/132kV, 100MVA 132/33kV and 60MVA 132/33kV capacity transformers.

Engr. Suleiman, who reiterated the commitment of the Federal Government to bridging the electricity supply gap in Nigeria noted that, aside the three transformer installations, there were several others that were ongoing and are at different stages of completion across the Region.

While maintaining that TCN sometimes faces challenges with distribution companies in the area of capacity expansion and load picking, he assured that the Company will not relent in its efforts to wheel bulk electricity to distribution companies nationwide. "You can see the commitment of TCN, we work in line with a well articulated plan, such that when we increase capacity on the 330kV level of the substation, commensurate investment is also made at the 132kV level. This is to ensure a balanced substation capacity expansion. We are however hopeful that the distribution companies will do the same to ensure that their customers feel the impact of our continued investment", he said.

On the imperative for synergy between TCN and distribution companies, he stressed that "distribution companies' customers will not feel the impact of TCN's expansion efforts except the DisCos equally expand and improve in terms of capacity building and facility upgrading at their end".

He regretted that Nigerians were yet to feel the full impact of TCN's grid expansion efforts due to capacity limitation of the distribution companies. He was however, optimistic that with the introduction of the Regulator Based Service Level Agreement (SLA), there was hope for improved electricity supply in the country.

Osogbo Sub-Region Regenerates Transformer ...Receives 75MX 330kV Shunt Reactor

By Omideji Oluwakayode



75MX 330kV Shunt Reactor

he Osogbo Sub-Region of Transmission Company of Nigeria (TCN), has regenerated its 4T2 90MVA 330/132/33kV Transformer to safeguard it from contaminated fluids and improve its operational capacity.

Assistant General Manager Transmission, Osogbo Sub-Region, Engr. Kolade Adelakun who disclosed this during a recent interview at the substation, revealed that the preventive maintenance measure was part of TCN's efforts to ensure that power equipment were adequately managed and maintained to guarantee sustainability.

Commenting on the state of the 4T2 9OMVA 330/132/33kV Transformer, Engr. Adelakun regretted that the oxygen byproducts that should make the transformer function properly had become sludgy over the years, owing to its age which could lead to transformer loss.

He expressed appreciation to TCN Management for approving the regeneration of the transformer, adding that the removal of acidity, oxidation by-product, sludge and water content, extends the life span of the transformer and enables it to operate optimally.

Adelakun explained that when transformers are newly installed,

the oil is new and chemical properties intact, but as they age, these properties begin to wane and the oil becomes acidic.

In a related development, the Region recently took delivery of a 75MX 330kV Shunt Reactor at its transmission substation, Osogbo.

The General Manager, Transmission, Osogbo Region, Engr. Mahmud Suleiman who disclosed this, said that the equipment which is to aid voltage control and reactive power compensation, will be pivotal in sustaining the reliability of power wheeled to distribution companies in the area when energized.

He said that the new equipment is expected to stabilise voltage on an acceptable operational standard as well as improve the quality of bulk power wheeled to Ibadan Electricity Distribution Company (IBEDC). He also disclosed that the 75MX 33OkV Shunt Reactor is the second reactor to be received in the substation.



The Regeneration Machine and transformer 4T2 90MVA at Osogbo 330/132/33kV substation, Osogbo

TCN Management Urges Staff To Fill Assets Declaration Form

By Latifa Haruna

he Management of Transmission Company of Nigeria (TCN) has urged all staff to fill the Code of Conduct Assets Declaration Form to protect them from falling foul of the law.

The Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Abdulaziz made this known during the National Joint Advisory Committee meeting with the National Executives of the Senior Staff Association of Electricity and Allied Companies (SSAEAC) recently in Abuja.

Engr. Abdulaziz disclosed that Management received a letter from the Code of Conduct Bureau directing that all staff should declare their assets in line with extant laws.

He explained that Management had planned to hold a sensitization programme for staff in order to assist them complete the forms accurately in line with the demands.

The MD who promised to continue to prioritise the welfare of staff, noted that the Company has made tremendous progress in recent years, even as he appealed to the Union to continue to partner with Management to achieve industrial harmony and move TCN forward. The MD also informed the meeting of some milestone achievements recorded by TCN which include the systematic implementation of TCN's flagship program, the Nigeria Electricity Grid Maintenance Expansion and Rehabilitation Program (NEGMERP), which is aimed at expanding the grid. Through diligent implementation of the programme, many substation upgrading and new projects including lines and tower projects have either been completed or ongoing.

In the same vein, the Lagos-Ogun project also recently received a boost with a loan approval by the Japan International Cooperation Agency (JICA). Implementation of the project will soon commence in earnest.

The System Operator can now on his part, monitor successfully, real-time generation and archive data from 27 power generation stations on the grid through the development of point to point modem BPM network and network monitoring motivation system solution, he added.

In his remark, the President General of SSAEAC, Comrade Chika Benedict, commended TCN Management for sustaining industrial peace and pledged that the Union will maintain harmonious industrial relations in the Company.



TCN Management and National Executive of SSAEAC

We'll Prioritise Workers Welfare In 2023, MD Assures NUEE

By Okoyefi Winny

ngr. Dr. Sule Abdulaziz, has assured that workers' welfare will be given top priority by Management this year, as part of efforts to sustain industrial harmony in the company.

The MD/CEO of TCN, gave the assurance during the National Joint Advisory Committee Meeting with the National Executives of Nigerian Union of Electricity Employees (NUEE) at TCN's headquarters earlier this year.

He assured the Union that the Management will continue to maintain an open-door policy in 2023, noting that this was necessary for cross fertilization of ideas required for a more efficient service delivery.

Speaking on the successes recorded in the previous year, the MD disclosed that significant milestone achievements were recorded with the implementation of TCN's flagship grid rehabilitation and expansion programme.

In his words, "we have made tremendous progress through the systematic implementation of our flagship programme, the Nigerian Electricity Grid Maintenance Expansion and Rehabilitation Programme (NEGMERP). This programme is aimed at expanding our grid network through diligent implementation of our network expansion projects, co-funded by the Federal Government and some donor organisations".

He maintained that, "in addition to upgrading existing transmission lines and substations, we have prioritised maintenance and provision of spare parts in our stores, to ensure availability for grid stability while the expansion programme is ongoing".

While lamenting the increasing cases of vandalism of transmission facilities, he added that, "we are not discouraged and I encourage you all not to give up on your duty to your fatherland. We are assuring you of our full support as we continue to ensure that our goal of efficiently wheeling bulk power to distribution companies for offtake to Nigerians is achieved."

Responding, the General Secretary of NUEE, Comrade Joe Ajaero, commended the TCN Management on its feats, and pledged the cooperation of workers in discharging the Company's responsibilities.



Group photograph of TCN Management and National Executive of NUEE after the meeting

TCN Inaugurates HR Learning Hub

By Joy Egbase

he Managing Director/Chief Executive Officer of Transmission Company of Nigeria (TCN), Engr. Dr. Sule Abdulaziz has stressed the need to build a robust, knowledgeable, and skilled workforce for optimum performance in the Company.

The MD/CEO who was represented by the Executive Director, Human Resources and Corporate Services (HR&CS), Barrister Justin Ishaya Dodo, gave the charge at the inauguration of TCN HR Learning Hub, held at TCN Corporate Headquarters in Abuja.



Middle, ED ISO, Engr. Mamman Lawal , flanked by ED (HR&CS), Barr. Justin Dodo, GM IR, Mr. Chucks Nnaji, GM Public Affairs, Mrs Ndidi Mbah, GM IR, Mrs Raheema Nyako and newly inaugurated members of the learning hub

According to the MD, TCN has consistently made strategic plans to

improve staff capacity and take the Company to the next level. He stressed the need for staff to have standard understanding and uniform interpretation of what ought to be done and how it should be done, to enable the Company harness and develop the capacity of the entire workforce towards the achievement of its corporate goal.

Engr. Abdulaziz disclosed that the initiative was an effective way to ensure that personnel of TCN have sound professional foundation, understand emerging issues and evolving best practices in human resource management.

Commending the initiative, the Executive Director, Independent System Operation (ISO), Engr. Mamman Lawal, noted that learning was critical for every TCN staff. In his words; "You will agree with me that learning is a continuous development exercise, you really never stop learning. Therefore, we have to take advantage of this opportunity and make the best of it. You are the champions of the learning process and you have to take it with all seriousness."

In his capacity as the Executive Director, Human Resources and Corporate Services, Barrister Justin Dodo, disclosed that the Company commenced the special learning initiative as part of its commitment to reform the Human Resource Department.

"In an attempt to take HR to greater heights, which is what this program aims to achieve, it is imperative to get back into professionalism. I believe that this pioneer batch of 25 staff will attain professional status before the end of the program, starting with their registration with the Chartered Institute of Personnel Management (CIPM). Another thing that gives me joy about what is happening today is that, we are going back to those things that made us HR Department; where we will completely perform our conventional role in the Company professionally when called upon," he said.

In her presentation, the Assistant General Manager, Learning, Performance and Training, Mrs Raheema Nyako, highlighted the objectives of the HR learning hub which include, but not limited to, complete overhaul of HR staff with focus on correcting systemic anomalies in order to upscale staff productivity, effectiveness and efficiency. In her words, "We aim to achieve success within a short time, and create an environment where innovation thrives. We also want to venture into partnerships that will work. There is opportunity for staff to display their talent and ingenuities. Finally, we want to be more professional and work more efficiently as a team".

SERVICOM Inaugurates Unit In TCN

By Uloma Osuagwu

n line with the Federal Government efforts to institutionalise Service Compact (SERVICOM) principles in all Ministries, Departments and Agencies (MDAs), a SERVICOM Unit has been inaugurated in the Transmission Company of Nigeria, (TCN).

The Unit, which consists of a 9-man Committee drawn from different departments in TCN was inaugurated by the acting National Coordinator of SERVICOM, Mrs. Nnenna Akajemili, on Thursday, 8th December, 2022, at its Corporate Headquarters, in Abuja.

Members of the newly inaugurated team are; Musa Hudu, TCN Focal Officer, Liman M, Deputy Focal Officer; Engr. Adeleke A., Service Improvement Officer; Awogbemi K. M, Customer/ Compliant Desk Officer;

Domsing Fanzhi, Charter Desk Officer; Kate Adi, Charter Desk Officer; Osian Hilary, Service Improvement Officer; Kazah Bili Akau, Public Relations Officer (ISO); and Comfort Doma Auta, Customer/Complaint Desk Officer.

In her keynote address, the SERVICOM boss said that the inauguration of the Unit in TCN marks a critical step in sustaining improvement in quality, efficient and effective service delivery to all stakeholders in the power sector.

She opined that the newly inaugurated members, were expected to among other things, create and maintain seamless relationship among stakeholders, culminating in transmitting electricity in a timely and efficient manner to the Distribution Companies. Mrs. Akajemili added that the Unit will also ensure promotion of quality assurance and best practices in electricity transmission and system operations in Nigeria.

Using the properly implemented SERVICOM Service Charter, she added that the Unit is also charged with discussing challenges, areas of improvement, and commendations geared towards ensuring best services to both internal and external stakeholders.



Newly inaugurated members of TCN SERVICOM unit in a group photograph with TCN Management and acting National Coordinator of SERVICOM

While expressing hope that the new Unit would add value to TCN, she noted that the inauguration came at the most auspicious time when President Muhammadu Buhari was committed to bringing about change in the Nigerian Public Service.

Earlier, in his welcome address, the MD/CEO TCN, Engr. Dr. Sule Abdulaziz reiterated the important role of SERVICOM in the Company's interface with stakeholders within Nigeria and the West African subregion in order to advance its vision of becoming one of the best electricity companies in the world.

Engr. Abdulaziz who was represented by the Executive Director, HR&CS, Barr. Justin Dodo charged the newly inaugurated Committee on the need to monitor and manage the performance and expectation gap between TCN and its stakeholders to ensure effective and efficient transmission of electricity.

About Transmission Company of Nigeria (TCN)

n response to the increase in Nigeria's demographic figures over the decades and the lack of commensurate increase in energy supply to meet the country's growing economic and infrastructural development objective, the Federal Government of Nigeria under the leadership of President Olusegun Obasanjo, realized that there was the need to break up the defunct National Electric Power Authority (NEPA) into small, effective units, to deliver more efficient electricity to the people.



among ECOWAS member states. The MD/CEO of TCN is the current Chairman of WAPP. TCN supplies bulk power to neighbouring countries in West Africa, namely: Republic of Niger, Republic of Benin and Republic of Togo.

The Transmission Company of Nigeria (TCN), transmits bulk electricity from the generators to electricity distributors nationwide, and

TCN Corporate Headquarters (Power House), Maitama Abuja

The unbundling of NEPA took effect when President Olusegun Obasanjo signed into law the Electric Power Sector Reform Act (EPSR Act), of 2005, which led to the formation of the Power Holding Company of Nigeria (PHCN) with a transitory framework. By this Act, PHCN was unbundled into 18 companies with separate operational licenses, including Six Generation Companies (GenCos), One Transmission Company (TCN), and Eleven Distribution Companies (DisCos).

Transmission Company of Nigeria PLC (TCN), is one of the 18 companies unbundled from the Power Holding Company of Nigeria (PHCN). TCN was duly incorporated under the "Company and Allied Matters Act" in November 2005, as a "Public Liability Company". TCN was issued an initial transmission License on 1st July 2006 by the Nigerian Electricity Regulatory Commission (NERC), which was subsequently re-issued as two licenses on June 10, 2013.

The two licenses include a Transmission Service Provider (TSP) License to provide bulk power transmission, operator, maintenance services as well as interconnecting neighbouring countries, and Independent System Operation (ISO) License to manage the grid and administer Nigeria's wholesale electricity market.

TCN is a member of the West African Power Pool (WAPP), an agency working towards improving cross border energy flow

also transmits to three neighbouring countries in West Africa. The company is headed by the MD/CEO, Engr. Dr. Sule Abdulaziz.

Vision

To be one of the leading electricity transmission companies in the world

Mission

To transmit bulk electricity in a most efficient and effective manner

Core Values

Integrity Transparency Sustainability Professionalism Customer Focus Teamwork Safety

TCN MANAGEMENT TEAM

Engr. Dr. Sule Ahmed Abdulaziz is the Managing Director/Chief Executive Officer of Transmission Company of Nigeria (TCN). Before his confirmation on the 4th of April, 2022, he was appointed Acting Managing Director of TCN on 19th May 2020.

Engr. Victor Adewumi is the Executive Director, Transmission Service Provider (TSP). He was appointed in September 2017.

Engr. Maman Lawal is the Executive Director, Independent System Operator (ISO). He was appointed in September 2017.

Mr. Ahmed Isah-Dutse is the Executive Director, Finance & Account (F&A). He was appointed in September 2017.

Mr. Justin Ishaya Dodo is the Executive Director, Human Resources and Corporate Services (HR&CS). He was appointed in August 2018.

ADMINISTRATIVE DIVISIONS

TCN's Corporate Headquarters is in Abuja, and the company is divided into 10 regions with full functional regional offices across Nigeria for ease of service delivery. These regions are Abuja, Bauchi, Benin, Enugu, Kaduna, Kano, Lagos, Osogbo, Port Harcourt and Shiroro.

The Company has one (1) National Control Center (NCC) in Osogbo, and three (3) Supplementary Control Centers in Shiroro, Benin and Lagos.

TCN Major Activities

The Company's major activities include

-Maintain and expand transmission facilities for efficient and effective wheeling of generated electricity.

-Create adequate network redundancies to ensure at least 99.9% reliability.

- Operate the transmission grid.

- Coordinate the activities of generating companies, distribution companies, eligible customers and international customers on the grid.

-Pursue Inter-connection with neighboring countries for power exchange with associated cost savings from the sharing of reserve capacity and energy resources.

- Ensure that safety and environmental issues are managed to meet international standards.

TCN Core Functions

TCN has two operational licenses to function as: Transmission Service Provider (TSP)

The Independent System Operator

I. Transmission Service Provider (TSP)

The TSP is licensed to carry on grid construction, operation, and maintenance of the transmission system within Nigeria and interconnection with neighbouring countries.

ii. Independent System Operator (ISO)

The ISO executes the following system operations functions: (a) generation scheduling, commitment and dispatch.

(b) transmission scheduling and generation outage co-ordination.

- (c) transmission congestion management.
- (d) international transmission co-ordination.

(e) procurement and scheduling of ancillary services and system planning for long term capacity.

(f) administration of the wholesale electricity market, including the activity of administration of settlement payments, in accordance with the market rules; and

(g) such other activities as may be required for reliable and efficient system operation.

FUNDING SOURCE

Currently, TCN primary source of revenue is from internally generated revenue from payment for services rendered to Generation Companies, Distribution Companies, International Distribution Companies and Eligible Customers. It is equally funded from the Federal Government budgetary appropriation for capital projects. The Company also receives grants and loans from reputable international donor agencies such as World Bank (WB), African Development Bank (AFDB), Japan International Cooperation Agency (JICA), Agence Française de Développement and the European Union (EU) among others.

SYSTEM PERFORMANCE

Overall performance of TCN is best measured by the amount of energy and peak energy it wheels through its vast transmission network. Grid statistical values have improved significantly since the inception of this Management in May 2020.

TCN efficiently transmitted the enhanced daily energy generated which was consistently above 100,000MWH. This was achieved four times within January 2020 and February 2021.

	MONTH	VALUE (MWH)
-	Jan-2020	99,987
	Feb-2020	111,085
	Mar-2020	106,010
_	Apr-2020	112,449
	May-2020	109,322
	Jun-2020	101,301
	Jul-2020	99 <u>,</u> 392
	Aug-2020	103,141
	Sep-2020	102,457
	Oct-2020	107,931
	Nov-2020	112,805
	Dec-2020	115,068
	Jan - 2021	99,987
	Feb-2021	116, 121

TCN REGIONS NATIONWIDE

TCN transmission lines transverses the whole nation and for ease of operation, is divided into 10 Regions with designated

REGION

Abuja

Bauchi

Benin

Enugu

Kano

Kaduna

Lagos

Osogbo

Shiroro

PortHarcourt

coverage areas as follows:

COVERAGE AREA

and Kaduna States

State

FCT, Nasarawa, Kogi, parts of Edo, Niger

Bauchi, Adamawa, Borno, Gombe, Plateau, Taraba, Yobe and Kafachan area in Kaduna

Edo, Delta, part of Ondo and Ekiti States

Cross River and some parts of Delta State

Kano, Katsina, Jigawa, some part of Bauc hi

Kaduna, Zamfara, Kebbi States and part of

Oyo, Osun, Ekiti, Ondo, Ogun and some

Rivers, Akwa-Ibom, Cross Rivers, Bayelsa,

Lagos and some parts of Ogun State

Enugu, Anambra, Ebonyi, Benue, Kogi

and Gazaoua in Niger Republic

parts of Kwara and Niger State

Niamey in Niger Republic

Imo and Abia States Niger and Kebbi States

	TOTAL No. OF	TOTAL No. OF	CAPACITY 330/132kV (MVA)	CAPACITY 132/33kV (MVA)
REGION	330kV	132kV	INSTALLED	INSTALLED
Abuja	784.9	742.68	1686	1887.5
Kano	142.63	957.06	1050	1465
Benin	1547.25	550.45	750	1330
Kaduna	523	573	907	1130
Lagos	1371.36	740.12	3960	4480
Osogbo	759.39	770.71	1290	1625
Port Harcourt	487.5	675.65	1362	2251.5
Shiroro	864.15	517.82	860	962
Bauchi	1489.3	1685.18	1200	1305
Enugu	968.11	695.7	1530	1672.5
GRAND TOTAL	8937.59	7908.37	14595	18108.5

TOTAL LENGTH OF 330 AND 132kV LINES (KM)

NUMBER OF 330kV AND 132kV SUBSTATIONS

REGION	330kV SUBSTATION	132kV SUBSTATION	330kV CIRCUITS	132kV CIRCUITS
Abuja	Katampe, Geregu, Gwagwalada, Ajaokuta, Lokoja, Lafia	Katampe, Keffi, Lafia, Dawaki, Okene, Karu, Akwanga, Ajaokuta, Okpela, Lokoja, Gwagwalada, Apo, Kubwa, Central Area, Kukwaba, Suleja	14	23
Kano	Kumbotso	Kumbotso, Dan Agundi, Dakata, Kankia, Katsina, Daura, Tamburawa, Kwana Dangora, Wudil, Walambe, Dutse, Azare, Bichi, Gagarawa, Hadejia	1	12
Benin	Benin South Sub Region, Sapele, Ihovbor, Omotosho, Delta	Benin, Ihovbor, Effurun, Amukpe, Omotosho, Sapele, Ondo, Akure, Delta 1, Afiesere, Okada, Irua, Oghara	18	15
Kaduna	Mando	Mando, Kaduna Town, Zaria, Gusau, Funtua, T/Mafara	4	6
Lagos	Akangba, Ikeja West, Oke Aro, Egbin, Aja, Alagbon, Lekki	Akangba, Ijora, Itire, Isolo, Ilupeju Ojo, Ilashe Island, Oke-Aro, Agobo, Alimosho, Ogba, Alausa, Ejigbo, Agbara Papalanto, Abeokuta, New Abeokuta, Ota, Egbin, Ikorodu, Odogunyan, Maryland, Aja, Lekki, Alagbon, Amuwo, Apapa, Oworonshoki, Akoka	24	64
Osogbo	Osogbo, Ayede, Ganmo	Osogbo, Ile-Ife, Ilesa, Offa, Ado-Ekiti, Ayede, Jericho, Ibn, Sagamu, Ijebu Ode, Sagamu Cement, Ibadan North, Iseyin, Iwo,Mcpherson, Ganmo, Ilorin, Omuaran	9	22
Port Harcourt	Alaoji, Afam, Adiabo, Odukpani	Aba, Umuahia, Afam, Ipp, Adiabo, Calabar, Odukpani, Owerri, Ahoada, Elelenwon Gabrain, Ph Main, Ph Town, Rumousi, Yenegoa, Eket, Ekim, Itu, Uyo	9	27
Shiroro	Fakun, Shiroro, Birnin Kebbi, Jebba	Dagongari, Kontagora, Shiroro 2, Minna, Tegina, Sokoto, Yauri, Birnin Kebbi, Jebba, Bida	17	11
Bauchi	Gombe, Yola, Jos, Molai, Damaturu	Gombe, Potiskum, Biu, Yola, Jalingo, Mayo Belwa, Savannah, Jos, Damboa, Bauchi, Makeri, Kafanchan, Maiduguri, Molai, Damaturu	10	19
Enugu	Apir, New Haven, Aliade, Onitsha, Asaba, Ugwuaji	Apir, Otukpo, Yandev, New Haven, Ugwuaji, Abakaliki, Nkalagu, Nsukka, Onitsha, Awka, Agu Awka, GCM, Oji, Asaba, Takum, Wukari, Agbor	18	14

TCN Earmarks Ten Houses For Demolition In Enugu

By Mary Philip Udom



Illegal building under transmission line Right of Way, marked for demolition in Enugu State

ransmission Company of Nigeria (TCN), has earmarked about ten illegal structures built under high tension transmission lines for demolition in Enugu State.

TCN's Principal Manager (Transmission) in Enugu sub-region, Engr. Jude Madu, who led a team of engineers on inspection visit to some of the locations earmarked for demolition said that it was extremely dangerous for people to live under power transmission lines.

Madu warned occupants of the illegal structures to vacate the premises as Government was set to commence demolition of the properties anytime soon.

He advised the general public to always seek experts' advice before raising any structure under electricity lines, to avoid putting their lives in danger and wasting funds on properties that would eventually be demolished. He cautioned that every structure built near a power infrastructure must maintain the approved distance of at least 50 meters away from 330kV transmission lines, and 30 meters away from a 132kV transmission line to avoid putting their lives and properties in danger.

Engr. Madu further explained that the company will demolish the marked structures as soon as the Regional office receives approval from top Management. He lamented the fact that previously people living in marked houses were given time to vacate, but instead, they cover or clean up the mark and continue to reside in the buildings. TCN, he said, will not allow that anymore.



Another building under transmission line Right of Way, being marked for demolition

Data And Dispatch Instruction Recording And Events Reporting

WHAT IS DATA?

Data are Factual Information, often in the form of facts or figures obtained from experiments or surveys, used as a basis for making calculations or drawing conclusions. Data are characteristics or information, usually numerical, that are collected through observation.

In a more technical sense, data are a set of values of qualitative or quantitative variables about one or more events or objects, while a datum is a single value of a single variable.

MINIMUM TYPES/NUMBER OF DATA EXPECTED FROM THE OPERATIONS/CONTROL ROOM

Capacity nomination by User Actual Dispatch capacity by the System Operator Reasons for disparity between the first two if any, Exact time of dispatch order given by the System operator Dispatch instruction compliance by the user exact time Voltage and frequency profiles Alarms and indicators Actions carried out and their exact time Equipment outage and restoration times Migration times and duration of each of the five states of the grid Active and reactive power profiles

CHARACTERISTICS OF CREDIBLE DATA, EVENT AND DISPATCH INSTRUCTION RECORD

Precision Timely Unambiguous Exact Clear Specific Properly channeled Self-satisfactory

IMPORTANCE OF DATA COLLECTION

It is through data collection that a business or management has the quality information they need to make informed decisions from further analysis, study, and research. Without data collection, companies would stumble around in the dark using outdated methods to make their decisions. Data collection instead allows them to stay on top of trends, provide answers to problems, and analyse new insights to great effect. By Ali Bukar Ahmed, GM, Regulation, Compliance

COMPONENTS THAT ENSURE DATA QUALITY

Completeness: Ensuring there are no gaps in the data from what was supposed to be collected and what was actually collected.

Consistency: The types of data must align with the expected versions of the data being collected.

Accuracy: Data collected must be correct, relevant and accurately represents what it should

Validity: Validity is derived from the process instead of the final result.

Timeliness: the data should be received at the expected time in order for the information to be utilized efficiently.

ELECTRICITY AS A COMMODITY: IMPORTANCE OF DATA, EVENTS AND INSTRUCTION RECORDING

Data is important because electricity is the only commodity which its supply must match its demand at all times. Every action or inaction by the operator is money gain or lost. Every dispatch instruction by the System Operator recorded or not, is money lost or gain. Every action of the user recorded or not is money gain or lost. Every action of the System Operator or User not properly recorded is money gain or lost.

NEEDS FOR DATA BASE MANAGEMENT

To ensure data conform to standard classifications, validity of the data, its integrity and internal consistency, secure and maintain primary data, allow easy access to primary data, process the data efficiently as required, allow different data sets to be integrated, thereby increasing their overall utility.

DISPATCH AND DISPATCH INSTRUCTION

Dispatch means; the process by which the System Operator directs the operation of the facility to cause a specified amount of Energy or Ancillary Services to be provided to or taken off the power system. Inclusive of curtailment of Demand and Interchange Transaction schedules in real time, to relieve congestion, maintain the reliability criteria, as more particularly described in the Grid Code, while;

Dispatch Instruction means the physical operating instruction issued by the System Operator to a User for its Dispatch in accordance with the Grid Code.

DISPATCHABLE GENERATOR

Dispatchable generators can adjust their power output

TRANSMISSION COMPANY OF NIGERIA

according to an order. Non-dispatchable renewable energy sources such as wind power and solar photovoltaic (PV) power cannot be controlled by operators.

FUNCTIONS AND COMPONENTS OF A SCADA SYSTEM

Data Acquisition: SCADA systems acquire machine data through networked devices and sensors connected to a PLC or RTU. These devices and sensors measure parameters such as temperature, speed, pressure, or weight as raw data. The data is then sent to a PLC or RTU, where it is translated into comprehensible and actionable information. Finally, the information is sent to an HMI and displayed to operators to analyse or act on.

CONTROL

Automated process control based on defined set-points is another SCADA functions. SCADA systems can be programmed to perform certain control decisions based on the parameters received from connected sensors. For example, if SCADA detects an abnormal condition in the process, such as power loss to a machine, and also detects an alarm that the machine's back-up battery power doesn't have a charge, the SCADA system could perform a control function to automatically turn on a generator to restore power. Additional SCADA control functions may include turning power on or off, increasing or decreasing speed and flow, raising or lowering temperature, and more.

ALARMS

When abnormal conditions occur within a process, SCADA systems can trigger alarms to notify operators that something is wrong. Alarm notifications may be presented to operators in the form of audible sounds, lights, graphical displays, email/SMS, or phone calls. Additionally, alarms can be programmed with different levels of priority to help differentiate major system errors from minor issues. It's a good practice to assign appropriate priority levels to alarms to ensure severe problems aren't ignored and the proper response is performed. For example, assigning the highest priority level to most or every alarm may prevent operators from being able to identify a major issue from minor events.

DATA COMMUNICATION

SCADA systems may use wired or wireless communication technologies, as well as different communication protocols to transmit data between machines and operators. Common non-proprietary communication protocols include distributed network protocol (DNP₃), Modbus, and IEC 60870-5. There are also numerous proprietary protocols specific to certain SCADA vendors. Additionally, SCADA systems typically utilize either closed local area networks (LANs) for local geographical areas, or wide area networks (WANs) for systems that need to

connect multiple local area networks that are spread across different regions.

COMPONENTS OF SCADA SYSTEM

SCADA systems are comprised of numerous hardware and software components working together to collect, translate, and display data.

SCADA hardware typically includes data collection devices such as sensors and relays, data processing devices, such as a PLC or RTU, and data display devices such as an HMI or monitor. Alternatively, SCADA software analyses and translates the collected data into useful information to be distributed to operators. SCADA software is also responsible for executing programmed control and alarming functions. Depending on the system, predictive maintenance and machine learning can also be accomplished with SCADA software.

CONVERSION UNITS OF SCADA SYSTEM

PLCs or RTUs collect data from inputs and sensors and translate that data into information that can be used by the SCADA system and understood by operators. PLCs or RTUs also receive signals back from the SCADA system to facilitate control functions. For example, the SCADA system may detect high pressure in a line and relay to the PLC that a pressurereducing valve needs to be opened. The PLC would then send the command to open the valve.

HMI

HMIs display actionable information collected from networked devices and sensors. The information is often displayed in the form of graphical pictures representing real-world objects, such as a pump or tank, as well as data charts, tables and performance reports. Once displayed on an HMI, operators are able to analyse the information and make data-driven decisions to optimize the efficiency and output of their production process.

DISPATCH PERIOD AND DISPATCH SCHEDULE

Dispatch period means any hour interval during a Dispatch Day, the first of which shall commence at 00.00 hours of Dispatch Day and the last of which shall end at 24:00 hours of that Dispatch Day.

Dispatch Schedule means the schedule developed by the System Operator in accordance with the Grid Code for a Dispatch Period not later than two hours prior to the commencement of the relevant Dispatch period.

REASONS FOR DISPATCH

Dispatch instructions are primarily issued such that available generation is matched to Demand with appropriate margin of

Operating Reserve whilst maintain the integrity and security of the transmission system with acceptable Quality of Supply. (Grid Code 21.2.1).

FORMS OF NOTIFICATION OF AN ABNORMAL OPERATION

A notification of an Abnormal Operation shall be of sufficient detail to describe the Abnormal Operation and enable the recipient of the notification to reasonably consider and assess the implications and risks arising. (Grid Code 20.5.1).

The recipient of the notification may ask questions to clarify the notification and the System Operator or the User shall answer any questions raised. (Grid Code).

OPERATIONAL COMMUNICATION AND DATA RETENTION

It is necessary that adequate communication facilities and procedures be established between the System Operator and Users to allow for the timely transfer of information, in order that the System Operator may fulfil its obligations with regard to the operation of the Transmission System. (Grid Code 20.13.1).

GENERATION DISPATCH

21.5.1 Dispatch Instructions to Generators: The System Operator shall issue Dispatch Instructions relating to the dispatch day at any time during the period beginning immediately after the issue of the Dispatch Schedule in respect of that Dispatch Day.

The System Operator shall give a Dispatch Instruction to a Generator for a specific Generating Unit to change the output of Active Power, Reactive Power or an instruction to provide Ancillary Service.

The System Operator shall give Dispatch Instructions to Generator orally, by phone or by electronic means including by means of Automatic Generator Control. The Dispatch Instruction shall identify the relevant Generating Unit by specifying the Generator's and Generating Unit's unique identification number pursuant Rule 15.5.1 of the Market Rules.

A Generator shall immediately and formally acknowledge a Dispatch Instruction in respect of a Generating Unit by telephone, or immediately provide a reason for non-acceptance. The reason for non-acceptance shall only be on safety grounds (relating to personnel or plant) or because the Dispatch Instruction is not in accordance with the Nomination or the Registered Information relevant to the time and period to which the Dispatch Instructions relates.

The System Operator shall be notified without delay by telephone in the event that in carrying out the Dispatch

Instruction, an unforeseen problem arises, caused on safety grounds (relating to personnel or Plant). The System Operator shall maintain a record of all daily Dispatch Instructions issued to Generators.

THE PRIMARY BENEFITS OF DISPATCHABLE POWER PLANTS

Providing spinning reserve (frequency control) Optimizing economic generation dispatch (merit order) Balancing the electric power system (load following) Contributing to clearing grid congestion (redispatch)

DATA AND NOTICES (GRID CODE 20.22)

Grid Code 20.22.1. Data and notices shall be submitted in accordance with relevant rules and procedures.

Grid Code 20.22.2. Data and notices to be submitted to the System Operator or the users, under the Grid Code shall be in writing and shall be delivered by hand or sent by pre-paid post, by telex, receipt email or facsimile transfer.

Grid Code 20.22.3. Data and notices to be submitted to the System Operator or the users, under the Grid Code shall be addressed to the person, and at the address, notified by the System Operator to the Users for such purpose in their respective agreements.

Grid Code 20.22.4 Data and notices to be submitted to the users under the Grid Code shall be addressed to the users' representatives as nominated in the Agreements. Or to such other person or address as the users may notify the System Operator from time to time.

Grid Code 20.22.5. All items, where applicable, shall be referenced to nominal voltage and frequency unless otherwise stated

Grid Code 20.22.6. All operational data shall be supplied in accordance with the timetables as set out in the Grid Code.

DATA RETENTION (GRID CODE 20.23)

Grid Code 20.23.1. this provision has to be read in conjunction with the Market Rules to form the complete requirement with regard to data retention.

Grid Code 20.23.2. Operational data is all data to be supplied by users under this code and any other data expressly provided to be operational data under this code. Operational data to be supplied by the users shall be submitted to the department or address as the System Operator may from time to time advise.

Grid Code 20.23.3. the users shall keep all operational data confidential.

Grid Code 20.23.4. System Operator shall maintain a complete and accurate record of all operational data supplied or maintained under the Grid Code. The format for the retention of records shall be as the System Operator may reasonably determine. All operational data shall be maintained for a period of no less than three (3) years commencing from the date the operational data was first supplied (or first created, if earlier).

Grid Code 20.23.5. the System Operator shall allow the users access to its records (and copies thereof) of operational data and/or data required to be maintained, on reasonable notice.

COMMUNICATION BETWEEN SO AND THE USERS (GRID CODE 20.21.)

Grid Code 20.21.1. Communication between the System Operator, the users on matters pertaining to the real-time operation of the Transmission system shall take place between the NCC and the User's control facility, unless where specifically provided for in the other Sections of this Code.

Grid Code 20.21.2. the System Operator shall ordinarily notify the Users as soon as practicable after the decision to move the NCC to a different location. This shall be no less than seven (7) days prior to the move, but in the event of an emergency, it may instead notify them as soon as practicable after the move.

Grid Code 20.21.3. all instructions given by NCC and communications between NCC and the User's control facilities shall be given by means of the specified communication facilities, unless otherwise specified in the Grid Code.

Grid Code 20.21.4. The System Operator, the users shall accept any automatic recording of communications given by means of telephony, electronic means, facsimile transfer or telex as evidence of instructions or communications.

OPERATIONAL COMMUNICATION AND DATA RETENTION (GRID CODE 20.13)

20.13.1. It is necessary that adequate communication facilities and procedures be established between the System Operator and Users to allow for the timely transfer of information, in order that the System Operator may fulfil its obligations with regard to the operation of the Transmission System.

20.13.2. The objectives are: (a) To establish contact locations for the System Operator and each class of user; (b) detail the communication facilities required between the System Operator and each class of User; (c) establish the procedure for communication of information of information between the System Operator and Users; (d) establish the procedure for the authorization of the System Operator personnel to act on behalf of the System Operator, and User's personnel to act on

behalf of the Users in the communication of information between the System Operator and Users; and (e); establish the general procedures for the retention of data.

20.13.3. Both System Operator and Users shall be obliged to adopt the use of new technologies and methodologies for communication of information, where there is a recognizable benefit from doing so, and to do so would be reasonable in the circumstances.

NOTIFICATION OF EVENTS (GRID CODE 20.8)

Grid Code 20.8.1. The System Operator shall notify the Users of Events which in the reasonable opinion of the System Operator are significant system incidents having an operational effect on the Users.

Grid Code 20.8.2. the users shall notify the System Operator of Events which may be significant system incidents affecting the Transmission System. The System Operator may use this information in notifying any other Users of the Event.

FEATURES OF NOTIFICATION OF AN EVENT (GRID CODE 20.9)

Grid Code 20.9.1. A notification of an event shall describe the event clearly. The information shall be of sufficient detail to enable the recipient of the notification to consider and assess the implications and risks arising.

Grid Code 20.9.2. A notification shall include the name of the individual reporting the event on behalf of the System Operator or the User, as the case may be.

Grid Code 20.9.3. The recipient of the notification may ask questions to clarify the notification and the System Operator or the User shall answer any questions raised.

IMPORTANCE OF DATA MANAGEMENT AND RECORD-KEEPING

They form the essential basis of monitoring, implementation and evaluation

They safeguard against violations of rights

Ensure transparency, accountability and ease to follow-up where necessary

Help in systematization and clear documentation of compliance to ruling documents, policies, and procedures.

Bauchi Region Organises Safety Enlightenment Workshop For Staff

By Jemimah A. Dami



Standing, RTM, Bauchi Region, Engr. Ganiyu O. Aliyu,

he Occupational Health and Safety Department (OH& S), Bauchi Region of TCN, recently organized a safety enlightenment/training workshop for Management and staff of the Region with a view to solving multiple interconnected safety challenges in the workplace.

In his welcome address at the Workshop, the Regional Transmission Manager, Bauchi Region, Engr. Ganiyu O. Aliyu, explained that the initiative of the enlightenment program was to educate staff on rules of safety engagement to enhance productivity, and put an end to the rate of accidents in workplaces.

He noted that one of the things staff were expected to know at the end of the workshop was the procedure for fire evacuation. In his words, "Your first mistake in the switchyard could be your last."

Speaking on the status of the Occupational Health and Safety Department in the Region, the Principal Manager (HSE), Mr. Nuhu Saidu, asserted that the Region had won an award for



Hando-on training

excellent safety habits/activities from the Managing Director of TCN.

Earlier, Manager, (HSE), Mr. Daniel Ibrahim, praised the Department and Management for the program. In his presentation, he emphasized that it was the duty of the employer to ensure safety and protection of machinery and employees from injury as well as dangers in the work place, and provide safe working environment as well as appropriate work equipment.

In addition, he stated that the employer must at all times ensure compliance with the conditions that facilitate the health and safety of staff and also ensure that the machines and work equipment were installed and kept in safe condition.

The highlight of the event was the practical aspect of the training, during which the participants were given hands-on training on how to use a fire extinguisher. The Principal Manager (HSE) thanked participants for their cooperation and noted that the same training was being undertaken nationwide.



Group photograph of staff of Bauchi Region after the training

SSAEAC Bauchi Region Inaugurates Chapter Executives

By Betnah Spiff



Cross section of Bauchi Regional Management and SSAEAC executives

he Senior Staff Association of Electricity and Allied Companies (SSAEAC), has inaugurated the Executive Officers of the Union for Bauchi Region.

The inauguration which took place on 22nd September, 2022, was carried out after a joint consultative meeting between TCN Management and the Union (SSAEAC), followed by an election which produced the new executive officers.

The Executive officers who were sworn in by Comrade Haruna A. Tinau, the Deputy General Secretary (SSAEAC), has Mr. Solomon Audu Kigbu as the Chapter Chairman, Engr. Usman Baba Shehu as Vice Chairman, Ibrahim B. Daniel as Secretary, Andrew M. Mobmi as Treasurer, Shuaibu Baba as Auditor and Garba Madu Muhammed as Financial Secretary.

After the inauguration, Comrade Rilwanu Shehu, Deputy President (North) charged the new officers to cooperate with Management and ensure excellence in the area of staff welfare in Bauchi Regional Office. He sued for collective effort through mutual understanding which he noted was vital for achieving the goals and aspirations of the Company.

The new Chairman, on behalf of the new Union Executive Council, thanked Comrade Shehu and his team, and promised to continue to ensure regular consultation with the Management and staff for the overall growth of TCN.



Newly inaugurated SSAEAC executives

Dealing With Stress

A ccording to the World Health Organisation (WHO) "Stress can be defined as any type of change that causes physical, emotional or psychological strain". Stress is the body's way of response to anything that needs attention or action. Everyone experiences stress to an extent, but the way a person responds to stress, however, makes a big difference to the person's overall well-being.

fference to the ng.

Stressful experiences occur in many

forms, that could be; a chronic disease, a demanding job, or even an argument with a loved one. However, all types of stressors, i.e stress from positive experiences, such as event planning can result in the same physical and emotional burden on health, especially when you're an older adult.

Stress isn't generally awful, but it requires proper management. A bit of stress can help a person to remain active, engaged, and ready to meet new challenges in the working environment or life entirely. It is what keeps a person on his/her toes amid an introduction or caution to avert mischances or expensive mix-ups.

Without stress, rarely can anyone grow in any field in life materially or spiritually. Let us give an example of a weightlifting; Weight lifting is about enduring stress, the more



you manage stress while lifting, the stronger you become but if you don't manage it properly you can break your back and pull all your muscles out.

Setting goals and engaging in relaxation techniques greatly reduce stress and ease the physical and emotional burden it can take on a person. We also require common sense and discrimination in order to actually utilize stress to grow.

Therefore, we need to accept stress as a way of life and learn the art of managing it and growing through it. In order to do so, it is important we have a strong foundation of ways to manage stress.

Stress and the storms of life are inevitable for everyone. They come in different ways, but the effect is similar. "Build your house on a foundation of rocks, then whenever storms come your house will not be moved but if you build your house on a foundation of sand, it may look beautiful but when a storm comes, it will collapse". It is therefore very important that we have a strong spiritual foundation in our life or a strong moral, ethical foundation in our life, so that when the stresses come, we can live with integrity.



Mr. Ahmed Tilde Mansur, SM (Lines), Birnin-Kebbi Sub-Region

Words can't wipe away our tears Hugs won't ease our pain Memories of you will live in our hearts Adieu...!!!







Engr. Bassey Isaac Eleng, (System Operations), Ikot Ekpene Sub-region, with his wife



Mr. Habib Lawal, (Audit), Kano Region, with his wife



Engr. Isimemen Omoifo, (System Operations), Port Harcourt Region, with his wife



Mr. Nura Sadiq Lamido, (HR), Kano Sub-region, with his wife



Mr. Avakaa Terhemba Victor, (Wayleave), Benin Region, with his wife



Engr. Sylvester Eyo Titus, (System Operations), Itu Sub-region, with his wife

Retirement



Engr Badamasi Adamu, General Manager, (Transmission), Kano Region



Mr. Rufus Imafidon, Principal Manager, (Public Affairs), Benin Region



Mr. Ignatius Godwin, Manager (Elect Mtce), Ikeja West Sub-Region



Mr. Harry Akobundu, Officer I, (MVD), Uyo Work Center



Mrs Ezeugwa Evelyn Nwaejiaga, Principal Manager, (HR), Lagos Region



Mr. Nwaogwugwu Lawrence, Manager (Electrical), Aba Sub-region



Miss Alice Okon Edok, Manager, (Office Admin), Calabar Sub Region.



Mr. Owolabi Rufus Oladepo, Officer II (MVD), Papalanto Sub-Region

The Making and Evolution of an Electricity Market: Unpacking The Nigerian Electricity Bill, 2021

By Ivie Ehanmo

Part 3: Market Stages – Phased development of the Electricity Market

Continued from last edition

n the second part of the multi-part series that unpacks the 2021 Electricity Bill, we explored the institutional framework for the Nigerian Electricity Supply Industry (NESI), as revamped within the Bill and the attendant impact of the proposed framework on NESI.

In this third part, we will x-ray the proposed market stages within the provisions of the Bill, vis-à-vis the existing provisions in the Electric Power Sector Reform Act (EPSRA of 2005) and proffer recommendations for the effective phased development of the electricity market. The aim is to educate readers on the process, evolution, and dynamics of electricity markets.

The Bill in recognising the legal validity of the evolution and reform of NESI, makes provision for the development of a competitive electricity market. Innovatively, the Bill seeks to delineate the market staging of NESI, recognising the preprivatisation and privatisation phases within the Electric Power Sector Reform Act (EPSRA of 2005), with the introduction of a rule and contract-based electricity market together with the interim, pre-transitional and transitional rules introduced to regulate the interim, pre-transition and transitional stages of the market.

Furthermore, the Bill makes provision for the long-term electricity market stage (which was absent in EPSRA) following the medium-term stage of the market, in addition to other stages as may be prescribed by the market rules or based on an amendment to the rules as approved by the Nigerian Electricity Regulatory Commission (NERC or the Commission). The Medium-Term Electricity Market as anticipated will allow for bilateral contract wholesale competition without the presence of a single buyer (i.e., the Nigerian Bulk Electricity Trader [NBET]).

The Long-Term Electricity Market will welcome the introduction of retail competition, which will allow for the licensing of suppliers as envisaged in the Bill, in addition to other

expected market outcomes. The Bill anticipates an amendment to the Market Rules to prescribe the pre-conditions for the long-term market.

These developments will provide the much needed clarity in the industry, given the existing grey areas in the EPSRA which are at odds with the Market Rules, thus creating statutory inconsistencies between the Act and the Market Rules regarding the market staging progression.

Within the provisions of EPSRA, the market stages are broadly divided into: (i) competition during the pre- privatisation stage under Section 25 of the Act; and (ii) competition during the post-privatisation stage under Section 26 of the Act to be preceded by a declaration by the Minister of Power that a more competitive market is to be initiated.

The Market Rules on the other hand makes provision for three (3) stages regarding the implementation of a competitive market, at the same time setting out the features and conditions precedent of each stage.

The stages as provided in Rule 6 of the Market Rules are:

- (I) Pre- Transition Stage,
- (ii) Transition Stage; and
- (iii) Medium Term Stage

While the Act provides a broad framework regarding the market stages, it fails to clearly spell out and delineate the parameters for competition during the post-privatisation stage and there is also no clarity as to the specific period within the various market stages that qualifies as the more competitive market anticipated to be declared by the Minister within the provisions of the Act.

Within the Bill, sufficient clarity has been provided as the Commission is responsible for advising the Minister on the end of the transitional electricity market and the establishment of the operational dates for the Medium and Long - Term Markets, following the satisfaction of the pre-conditions for the operationalization of the anticipated market stages. The declaration of the Medium-Term market is now the responsibility of the Commission alongside the newly factored Long-Term Market, unlike EPSRA that vested such power with the Minister. As the regulator of the industry, the Commission is best placed to assess the conditions of the market as it progresses along the expected market maturity stages.

It is therefore commendable that the Bill has provided the much needed clarity forming the basis for assessing the prerequisites for the market transition process in NESI and providing a basis for ascertaining the roles that market participants are expected to undertake in each period/market stage, thus creating a platform for a clear and effective market transition process, subject to the right indices being in place and strategically implemented across the value chain spectrum.

The Commission is to ensure a phase wide development of the Nigerian electricity market from the current transitional electricity market stage to the medium-term and long-term electricity market stages.

There are generally six (6) stages in an electricity market progression which need not be followed in a linear progression, but in the case of Nigeria and Sub-Saharan Africa, it has been recommended that the steps be followed in a linear progression, given the nascent state of market development

Given the promulgation of the Eligible Customer Regulation in Nigeria, a seventh (7th) step, though interim, may need to be recognised within the Nigerian context. The Bill makes provision for the Commission to issue directives specifying the class or classes of end-use customers that may from time to time constitute eligible customers at every market stage, following its assessment/monitoring of the electricity market development.

The Commission is responsible for the declaration of 'eligibility' at each market stage, a deviation from the provisions in the EPSRA that vested eligibility declaration with the Minister. Furthermore, the Bill allows the Commission to review any class or classes of eligible customers already declared by the Minister prior to the commencement of when the Bill is enacted into law.

The steps for electricity market progression are depicted in the schematic below. There are however necessary pre-conditions for each step which fall outside the scope of this brief.

In progressing along market stages, best practice recommendations should be considered including:

• For an effective transition to wholesale power markets, a fully competitive generating sector with multiple sellers and buyers interacting in the marketplace is a requirement as it will aid in the determination of the equilibrium price and quantities.

• Careful design of the reform/transition is required and there should be scope for dealing with design flaws and setting-in problems.

• Wholesale market design should be guided by four principles - short-term efficiency, demand side participation, open access and a workable framework for supply adequacy.

• In encouraging wholesale competition, system reliability must be preserved.

• Demand side management in addition to supply side management is essential for the attainment of a competitive wholesale market.

• Retail competition should be implemented after wholesale power markets are functioning well to keep costs and prices down as was the case in the UK.

• Competition should be introduced gradually to the wholesale power trade, given the absence of the necessary conditions for open competition in power markets.

• Conditions should exist for the establishment of a liquid balancing market to facilitate bilateral trading.

• Market monitoring and regulatory oversight are important for successful power market reforms / transition processes.

In the Nigerian context and by extension Sub-Saharan Africa, given the nascency of the respective power sectors, the existing limiting factors to market progression will need to be addressed including -

(a) lack of active contracts in the market which is a prerequisite for progressing to the medium-term market resulting from: (i) capacity shortage and infrastructure challenges, (ii) network challenges, (iii) regulatory inconsistencies, (iv) liquidity issues, (v) lack of effective payment security and guarantees to backstop payments in the respective Power Purchase Agreements, (v) lack of effective payment discipline across the value chain, etc. To move forward, several preconditions must be fulfilled including:

Active contracts Credit - worthy off - takers Cost - reflective market - based tariffs Balancing market Adequate generation to meet demand all year Adequate transmission capacity, etc.

It is hoped that the Bill following several re-engineering processes hinged on additional considerations will successfully be passed into law and implemented in its entirety across the electricity value chain.

Key Takeaways

Consistency and alignment between primary and secondary legislation(s) regarding the phasing of market staging is essential, to prevent any potential dichotomy and misinterpretation and to ensure that there is clarity of process and the roles of the various players and stakeholders involved in the market staging progression.

The declaration of the attainment of the respective market stages should be the responsibility of the regulator and not the Minister. As the regulator of the industry, the Commission is best placed to assess the conditions of the market as it progresses along the expected market maturity stages.

Although there are generally six (6) stages in an electricity market progression, the conditions of the market may necessitate the inclusion of additional stages such as the recognition of Eligible Customers within the market stages in Nigeria.

In the Nigerian context and by extension Sub-Saharan Africa, given the nascency of the respective power sectors, the existing limiting factors to market progression will need to be addressed.

To move forward, several pre-conditions must be fulfilled including - Active contracts, Credit - worthy off-takers, Cost-reflective market-based tariffs, Balancing market, Adequate generation to meet demand all year, Adequate transmission capacity, etc.

Careful design of the reform / transition is required and there should be scope for dealing with design flaws and setting - in problems.

In progressing along market stages, best practice recommendations should be considered as enumerated in the brief.





- That the power grid is a network of transmission and distribution lines that deliver electricity from generating plants to electricity consumers.
- It comprises Generating Stations; Transmission Substations, Lines and towers; and Distribution Injection Substations; Distribution Transformers and Lines.
- That GenCos produce power.
- TCN takes bulk power produced from different power generating plants and transports through high tension transmission lines to the load centers of Distribution Companies (DisCos).
- Only DisCos supply electricity directly to our homes and offices.
- That the causes of National grid disturbance includes, among others:
 - -Vandalism of Power Infrastructure
 - -Poor Gas Supply
 - -Sudden Power Drop by DisCos or GenCos
 - -Snapping of transmission power cables.
 - -Poor/Low Generation
 - -Natural Forces strong wind, heavy rainfall, erosion, etc

Words On Marble

It is suicidal to erect structures for trading and/or residence under high-tension towers and cables.

Yes, it is life-threatening. You owe yourself the responsibility to preserve your life.

EKPE SECRET SOCIETY

By Uduak Etukudo

ORIGIN

"Ekpe" is an Efik word used to refer to wild animals of the cat family, such as the Lion, Leopard, Tiger, Cheetah and the Lynx. This word is the name given to the most popular and important traditional masquerade of the Efiks.

Why this masquerade is associated with wild animals is not known yet. One is left to wonder if it is due to the authority, power, reverence and fear which these wild animals evoke from other animals, including man. The adoption of the name by the masquerade and its society could be due to the desire of identifying, with the power of the beastly creatures, and to indicate that they do possess supernatural power which enable them to exercise authority over other aspects of the society. Politically, it represents the Efik's highest institution of government, having in the past, the supreme power of life and death. Nobody or group could ever challenge any decision of the society which often settled major disputes between individuals or groups, and cases between one Efik clan and the other.

As a one-party system of government, its judgement was always final, and was not subject to appeal. These legislative and judicial functions were derived from the political control of the Ekpe cult over the people and the society. The disputes, and violent conflicts which the Ekpe settled could be classified as immoral and undesirable acts, but, by settling them, Ekpe was trying to preserve the moral standards of the society.

THE EKPE MASQUERADE

The Ekpe Masquerade also referred to as the Idem Ikwo, is one of the most vivid depiction of the Ekpe society or cult. Some Efik traditionalists have claimed that Ekpe originates from Efik land, but some a uthorities



The prestigious Ekpe Masquerade of Calabar

Economically, it provides revenues to members who normally benefits from the entrance and initiation fees paid by new members. Fines from members and non-members, as well as gifts from many other sources were also shared among members according to their grades and titles.

believe that it was actually obtained from foreigners.

In earlier years, the Ekpe society acted as the custodian, guardian and protector of the moral-fabric of the Efik society. It served to encourage and protect right conduct in the Efik community. It also instilled moral traits in its members or initiates. As a custodian of the moral standards of the Efik society, Ekpe served to protect, preserve and encourage those actions which were considered good, right and desirable by all. It carried out these functions in various aspects of societal life such as; political, economic, social, cultural and religious.

Through this, the society realized much money from wealthy European traders who accepted membership in order to protect the interest of their businesses. Membership gave them the right of recovering their debts more easily through the society. In these ways, Ekpe enriched the resources of some of its members and enhanced or improved the businesses of others.

Socially, Ekpe, as the supreme authority, helped the weak and the poor to overcome oppression and injustice, because they had equal rights to present their cases to the society. Members
endeavored to keep clean records so as to be promoted to higher grades. Furthermore, the society also brought all Efik communities together under one supreme authority.

The social impact was also seen in the numerous ceremonies and celebrations with sumptuous feastings, singing, dancing and merriments during initiation of new members, installation of title holders and funerals of dead members who were title holders. Through these ways, Ekpe provided entertainment and relaxation to members of the public, enhanced their wellbeing and the progress of the community.

As a law enforcing cult with legislative and judicial powers, it made several laws; for instance, it abolished the practice of human sacrifice at the funerals of Efik nobles. It also abolished the holding of markets on Sundays and ended the practice of witch-hunting through the administration of esere beans to suspects.

Religiously, members swore by Ekpe, made promises by it, and consulted it when faced with difficulties. Its oath or "mbiam ekpe" was believed to be very strong and effective, and capable of preventing crimes and offences. The effect of this oath on any culprit was sudden death by swelling.

In this vein, it is still performing some of the functions it performed in the past. Politically, most of its powers have been eroded as it is no longer the Efik highest institution of government, neither does it have the supreme power of life and death as it did in the past. Nevertheless, it is still closely associated with the Efik throne. The Efik king is expected to be an Ekpe initiate of a high rank. Certain traditional ceremonies and rites are performed at the Ekpe shrine or shed during the coronation of a new king. The Ekpe masquerade (Idem Ikwo), still symbolizes the authority within the Efik throne. It is included in emblems, symbols and insignias of various traditional Efik organizations.

The close association or linkage of the Ekpe with the Efik throne, preserves the impression that the past authority of Ekpe is still behind the throne, although this may not be completely correct. This impression serves to instill or command awe and respect from the Efiks for the Efik throne. They obey rules and orders from the king. For instance, the king can ban or prevent a recalcitrant masquerade from displaying. The king still settles disputes between contending parties. Thus, the authority of Ekpe still exists through the Efik throne from where it is still trying to preserve and maintain moral standards.



Ekpe Masquerade during display

Economically, it is still providing resources to its members, though on a smaller scale. Initiation fees from new members, fines from members and non-members as well as gifts from other sources are still being shared among members according to their grades.

Socially, Ekpe enhances good conduct among its members, as there are rules and regulations for them. They endeavor to behave well so as to ascend to higher Ekpe grades. Any erring initiate can be fined drastically. Similarly, any erring Ekpe masquerade can be fined or disciplined in other ways.

Religiously, some initiates still revere and swear by Ekpe. This brings us to the issue of "Mbiam Ekpe (oath) which is still relevant today. It is a vital and potent factor in the administration of justice and law by Ekpe. It is a sort of juju, charm or fetish material which is believed to have power to harm trespassers.

Occasionally, it is used by communities to prevent trespassers from disputed lands. It is also used to protect properties from thieves. When placed in an area, it means that nobody should trespass into that area until it is removed. Till today, "Mbiam is still being used in various Efik communities to settle or manage land disputes. It checks land disputes by preventing the warring parties from entering there, and it also protects properties and premises from intruders.

Ekpe has gone through centuries of sole dominance into a century of power diminution and a period of moderation as a result of various influences, especially external ones. Inspite of all these modifications, Ekpe still stands as a traditional institution which cannot be easily swept away.

ANIMALS

F P P S P R L Н S D A N D A Х M Ē W Ζ F S S W 0 L 0 В A M F Н U Н G Κ P L U Ρ W J E L Y F L S Н S L 0 L L L P P C S G 1 G K M P M K A A V E В н Ζ R A P M Н W 0 S Q Н N E Т U D A Y A Ζ E W S Т N L Q D N U 0 A L D R E C G R E G L Н N Y G A K G R U L K J E S D E A T A E F N K Т 0 R R E E N В R C L I 0 N E A 0 Y A E Κ 0 R A A E E P S N R 0 A L Н A N Т Y Т B E N Q 0 N S U G T N W A L R U S S Κ Y A P R S E 0 E Т E н 0 D N K Y D Κ N M

Find the following words in the puzzle. Words are hidden $\rightarrow \psi$ and \checkmark .

CRABS DOLPHINE DONKEY ELEPHANT GOAT HORSE JELLY FISH KANGAROO LION LIZARD MONKEY PANDA PELICAN SEA HORSES SEA LION SHARK

SNAKE TIGER TURKEY WALRUS WHALES WOLF ZEEBRA

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FEEDBACK PAGE

Godwin Aboyi

Very indepth and educative. Market participants should try and remove politics from the NESI, adhere strictly to the market rules. For continuity and smooth running of the market, participants are expected to pay the necessary please. Thanks.

Like Reply Hide 1 w

Khalifa Faruk

This is a welcome development to people of Kano , we hope to enjoy more. More grease to your elbow.

Like Reply Hide Send message 3 d

Olasumbo Oladosu Great opportunity for.....

Great opportunity for.....

Maintenance costs reduction...

Reduce cost of fueling generator More savings on overhead.

Like Reply Hide 2 w

Like Beply Hide 1.w

Weldon TCN! Progress for Nigeria

Oumar Aleeyou Gwanee

Tijjani Ismail

Well done job-Continuous to upgrade your capacity for national development. People now had clear understanding of your operations, as bridge link in the power sector. You are the hub of power Engineers in the country, training and retraining of professionals,which can better service humanity for overall development.

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Top fan

Aminu Abdulrazaq Ozovehe That's one thing about TCN, immediate response. God bless TCN staff

This is good TCN and its the best way to prevent loses.



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