

STANDARD OPERATING PROCEDURE (SOP)

FOR

ELECTRICAL EQUIPMENT INSTALLATION AND CONNECTION

TECHNICAL

1. DOCUMENT DETAILS

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S/N	AUTHORISING OFFICERS' ROLE	JOB TITLE	NAME	SIGNATURE	DATE
1	Initiator	Head Asset Management, Preventive Maintenance	Chidubem Emmanuel		10/07/24
2	Reviewer (HOD or Supervisor)	Head Network Operations	Kingsley Atseyinku		10th July, 2024
3	Concurrence (Technical Services)	Chief Technical Officer	Jonathan Lawani		10.07.24
4	Concurrence (PPRC)	Chief Commercial Officer	Akinleye Ogunleye		10/07/24
5	Concurrence (Audit)	Chief Internal Auditor	Gilbert Owoupele		
6	Approval	MD/CEO	Deolu Ijose		01/08/2024

Note: This sign-off authorizes the immediate implementation of this document.

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BEDC SOP

4. STANDARD OPERATING PROCEDURE (SOP)

4.1 DEFINITION OF TERMINOLOGIES

<i>ACRONYM</i>	<i>MEANING</i>
<i>BEDC</i>	<i>Benin Electricity Distribution Company</i>
<i>COREN</i>	<i>Counsel for The Regulation of Engineering in Nigeria</i>
<i>CTO</i>	<i>Chief Technical Officer</i>
<i>DN</i>	<i>Distribution Network</i>
<i>DSS</i>	<i>Distribution Substation</i>
<i>ISS</i>	<i>Injection Substation</i>
<i>NEMSA</i>	<i>Nigerian Electricity Management Services Agency</i>
<i>NERC</i>	<i>Nigerian Electricity Regulatory Commission</i>
<i>PC&M</i>	<i>Protection Control and Metering</i>
<i>RH</i>	<i>Regional Head</i>
<i>RHT</i>	<i>Regional Head Technical</i>
<i>SOP</i>	<i>Standard Operating Procedure</i>
<i>TCN</i>	<i>Transmission Company of Nigeria</i>
<i>HNO</i>	<i>Head Network Operation</i>

4.2 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to establish a structured process (standard process flow) for electrical equipment installation and connection at Benin Electricity Distribution Company (BEDC). This procedure is designed to ensure a seamless and defined process for the application, processing, and connection of all new electrical infrastructure, including but not limited to dedicated and public lines and substations.

The SOP is designed in line with industry best practices, project management practices, and in compliance with the Nigerian Electricity Supply Industry (NESI) standards and regulations. This is to ensure full compliance and implementation of the NESI Distribution Codes (D-Codes) for distribution network planning, construction, safety, operation, and maintenance. The SOP also assigns responsibilities for accountability and efficiency.

It will strengthen the internal processes of connecting electrical equipment in a timely, safe, and economic manner.

4.3 SCOPE

This SOP applies to all employees and contractors involved in activities that require a permit to construct within the BEDC franchise. It applies to (but is not limited to) the following:

- **Distribution Network:** LV, HV, EHV

- **Voltage ranges:** 230V, 400V, 6.6KV, 11KV, 33KV
- **Equipment:** DSS, ISS, CB, Feeder Pillar, Cables, Meters, Lightening arrestors, cross arms, Poles, feeders, isolators, etc., inclusive of safe working space.

4.4 PREREQUISITES/REQUIREMENT

The tools available to carryout the procedures are not limited to the Distribution Code, NESIS Regulations 2015, NEMSA Regulations, BEDC Onboarding SOP, Permit to Construct approval letter, Project Planning reporting templates, etc.

4.5 RESPONSIBILITIES

The Chief Technical Officer is responsible for the implementation and review of this SOP.

4.6 WORKFLOW

4.6.1 Electrical Equipment Installation and Connection

4.6.2 Process Owners

WORKFLOW ACRONYM	SOURCES OF DATA	INITIATORS DESIGNATION	1ST LEVEL APPROVAL	2ND LEVEL APPROVAL	PROCESSED BY
EEI&C	Hard copy, Email	BHTO, RHT, RH	Head Network, CTO	MD/CEO	Technical

4.6.3 Procedures

ACTIVITY	DESCRIPTION	RESPONSIBILITY	TIMELINE
Overview	This session describes the procedure for electrical equipment installation and connection at BEDC PLC throughout the life cycle to ensure that the key stakeholders involved take full ownership of the process operation, to curb the rate of project construction completion before obtaining a permit to construct illegal installations, and to establish a standardised process in compliance with the company's rules and objectives and in line with NESI regulations.	BHTO, RHT, RH, RMDM, BM, Head MD, CRCM, Head Network, CTO, MD/CEO	N/A

<p>Documentation and approval required</p>	<p>1. A licensed or registered electrical contractor or the client or customer (introduce the contractor who has been contracted to carry out the installation) sends an application for Permission to Construct to the MD/CEO through the Regional Head. The application should be accompanied by the following:</p> <ul style="list-style-type: none"> • Name and address of the applicant. • Documents showing the contractor is licensed. • Evidence of payment of administrative fee (if any). • Single line drawing showing at least three (3) existing/adjoining substations. • Proposed capacity and voltage level of the substation. • Estimated load demand of the proposed project. • Letter of undertaking to pay all monthly electricity bill as at when due. • Clean and clear photograph of the customer’s premises/property. • Letter of attestation by the licensed contractor to execute the project in line with NESIS regulation. 		
	<p>2. The Regional Head (RH) reviews and forwards to the Regional Head Technical (RHT).</p>	<p>RH</p>	<p>1 day</p>
	<p>3. The RHT assigns the Planning/Construction Engineer/BHTO or designated technical personnel to carry out a technical survey or analysis.</p>	<p>RHT</p>	<p>1 day</p>
	<p>4. The Planning/Construction Engineer/BHTO or designated technical personnel updates the single-line diagram based on the site survey and affirms.</p>	<p>BHTO</p>	<p>2 days</p>

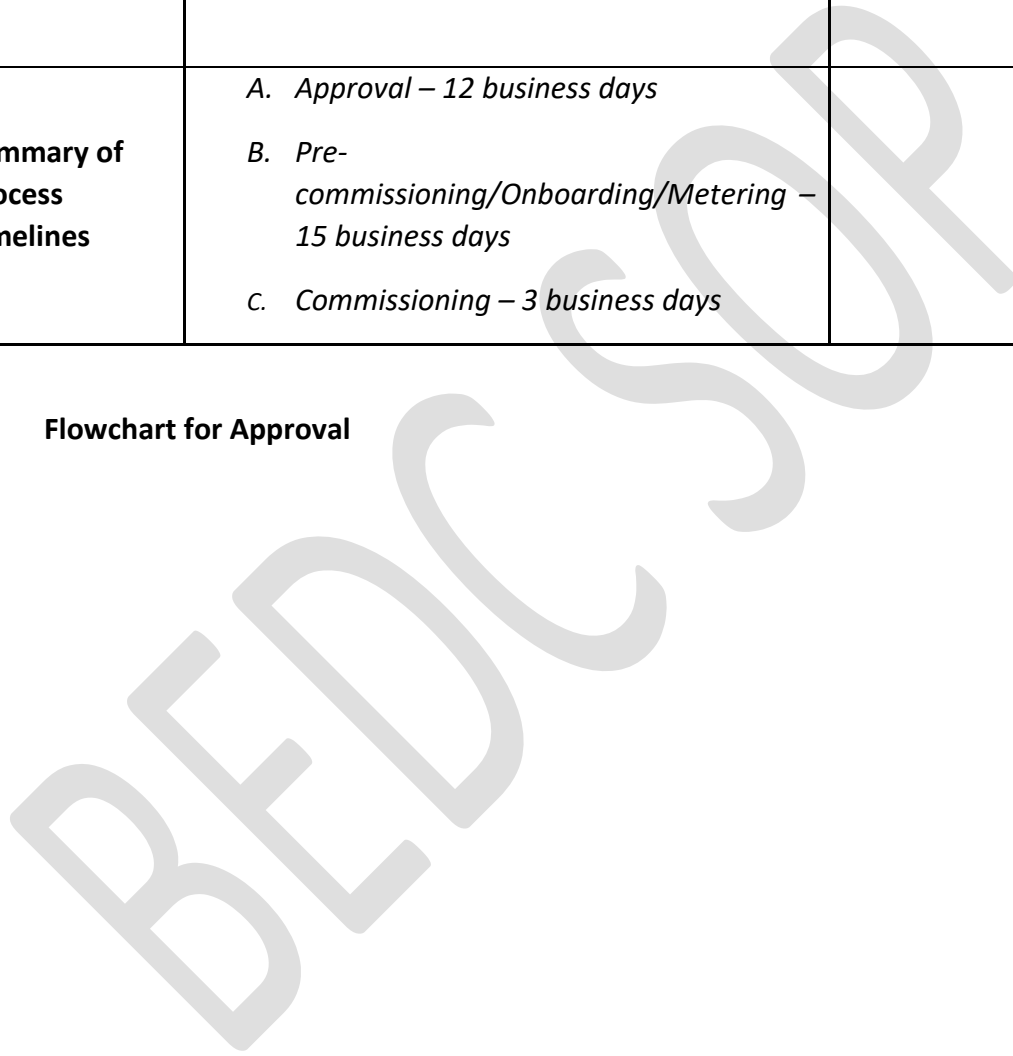
	<p>5. The RHT prepares a technical and commercial feasibility report reviewed by the RH of the proposed construction.</p> <p>6. The Regional Head Technical forwards request and recommendation to the CTO for management consideration and approval and copy the CCO.</p> <p>7. The CTO assigns the application request to the Head of Project Planning (HPP) for network planning and analysis. Depending on the nature of the project, the HPP can carry out additional site inspections.</p> <p>8. The HPP makes recommendation (approve or decline) to Management.</p> <p>9. The recommendation is reviewed by the Head Network Operations (HNO) and Head Maximum Demand (for point loads) or Chief Revenue Cycle Manager (for public or relief substations, based on Community Relations review).</p> <p>10. The CTO further reviews the recommendations to MD/CEO or his designate for approval.</p> <p>11. Management decision (approve or decline) on the application is communicated to the applicant.</p> <p>12. For approved project, the letter of approval shall contain the following:</p> <ul style="list-style-type: none"> • Terms and conditions. • Standard and quality of construction requirement. • Requirements for commissioning of the project. 	<p>RHT</p> <p>RHT</p> <p>CTO</p> <p>HPP</p> <p>HNO/Head MD/CRCM</p> <p>CTO</p> <p>HPP</p>	<p>1 day</p> <p>Same day as above</p> <p>1 day</p> <p>3 days</p> <p>2 days</p> <p>2 days</p> <p>1 day</p>
<p>Procedure for Pre-commissioning, Onboarding and Metering</p>	<p>1 The contractor, upon receipt of the approval, commences the project construction in line with the standards and specifications.</p> <p>2 The contractor writes a letter (notice) of completion requesting inspection</p>	<p>N/A</p>	<p>N/A</p>

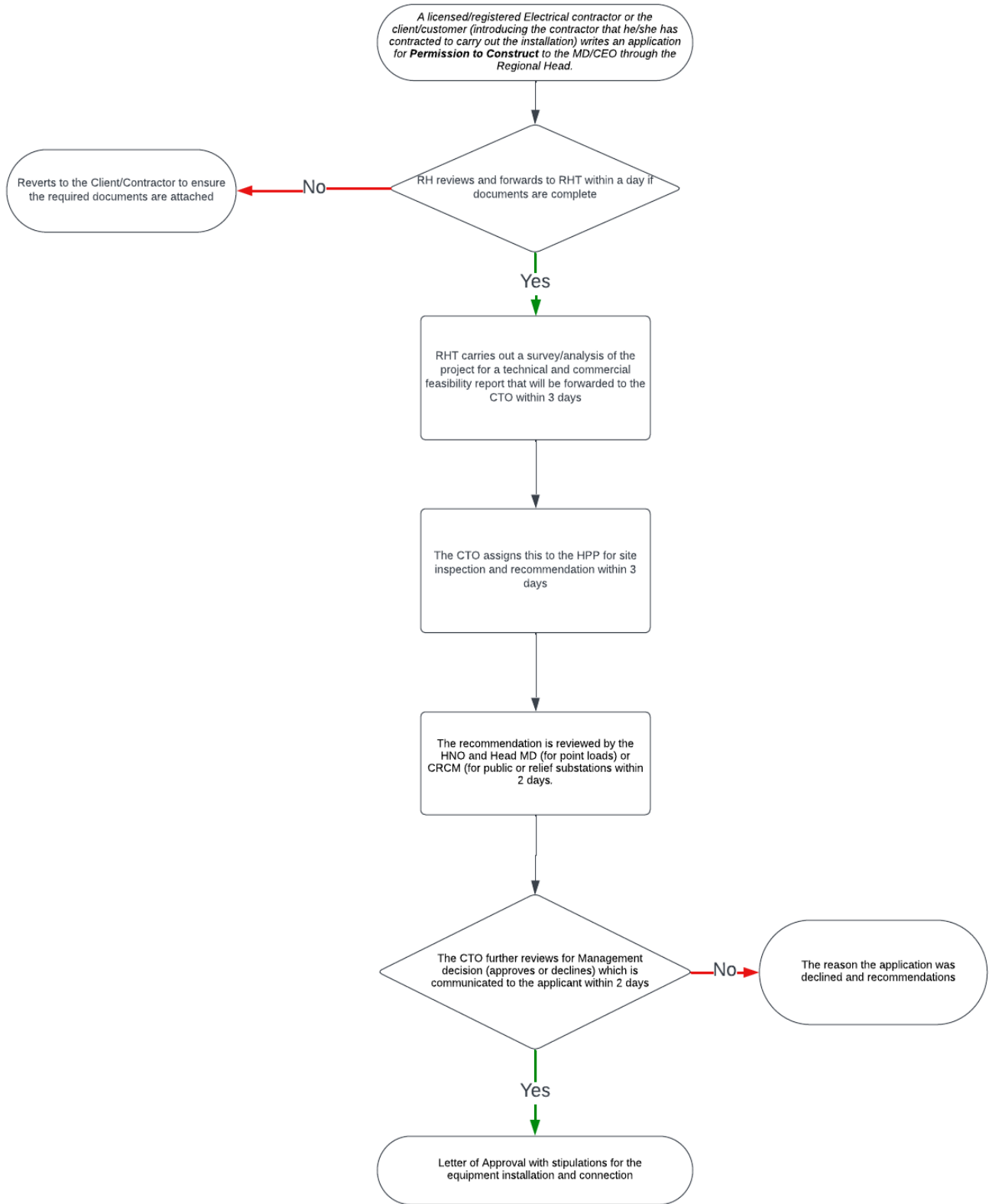
	<p>and pre-commissioning to the RH, accompanied by the following documents:</p> <ul style="list-style-type: none"> • Copy of permit to construct approval • A letter of acceptance of the stipulated conditions in the 'Permit to Construct' approval letter • Copy of application for permit to construct • NEMSA letter of certification • Original receipts for procurement of materials (especially the transformer) • Original transformer test report from the manufacturer • Completion letter from the vendor/contractor/client • Letter of guarantee for one year • Clear and geotagged photos of the construction • Duly completed connection agreement – Form 74 <p>3 The RH forwards the notice of completion to:</p> <ul style="list-style-type: none"> • RHT for pre-commissioning activities; • Regional Maximum Demand Manager (RMDM)/Business Manager (BM) for onboarding in line with the existing onboarding process for point load and public construction, respectively; and 		
		RHT	5days
		RMDM/BM	11 days

	<ul style="list-style-type: none"> Regional Metering Engineer (RME) for the Metering Process in line with company's existing policy on metering. 	RME	10 days
Procedure for Commissioning	<p>4 The RHT assigns the BHTO, PC&M, electric fitters, and cable jointers to carry out pre-commissioning activities, to ensure compliance with company standards, quality, and safety.</p> <p>5 The RHT receives and reviews the pre-commissioning test report from the technical team, the onboarding report (account number) from the commercial team (RMDM or BM), and the metering report (meter number) from the RME.</p> <p>6 Upon certification, the RHT submits a request for commissioning to the CTO with the documents submitted by the contractor for pre-commissioning and the following:</p> <ul style="list-style-type: none"> Duly completed and signed Project "Completion Checklist". PC&M test result. Clear and geotagged photos of the construction. Account number generation form from RMDM 	RHT	1 day
	<p>7 The CTO reviews and approves/declines copying the relevant stakeholders (CCO, CRCM, Head MD, HNO, RH, Head Central Load Dispatch (HCLD), HPP, Head Asset Management Preventive Maintenance, and Head GIS).</p>	CTO	1 day
	<p>8 The RHT carries out the final connection to the grid if approved</p>	RHT	1 day

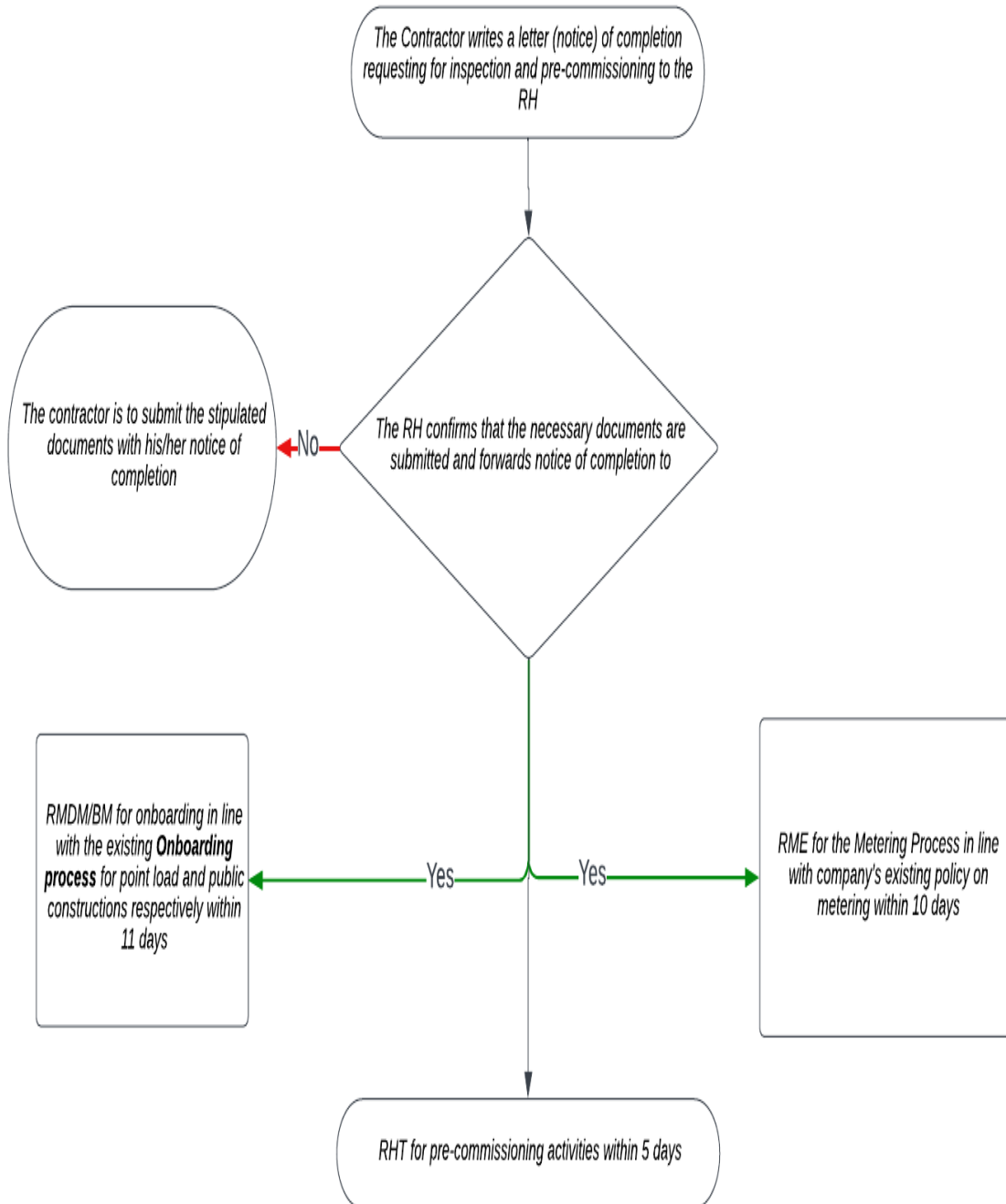
	<p>through the BHTO or designated technical personnel.</p> <p>9 The HPP captures the data of the newly commissioned projects and updates company records and communicates same to relevant stakeholders as at when due.</p>	HPP	On or before 7 th of every month
Summary of Process Timelines	<p><i>A. Approval – 12 business days</i></p> <p><i>B. Pre-commissioning/Onboarding/Metering – 15 business days</i></p> <p><i>c. Commissioning – 3 business days</i></p>		

4.7 Flowchart for Approval

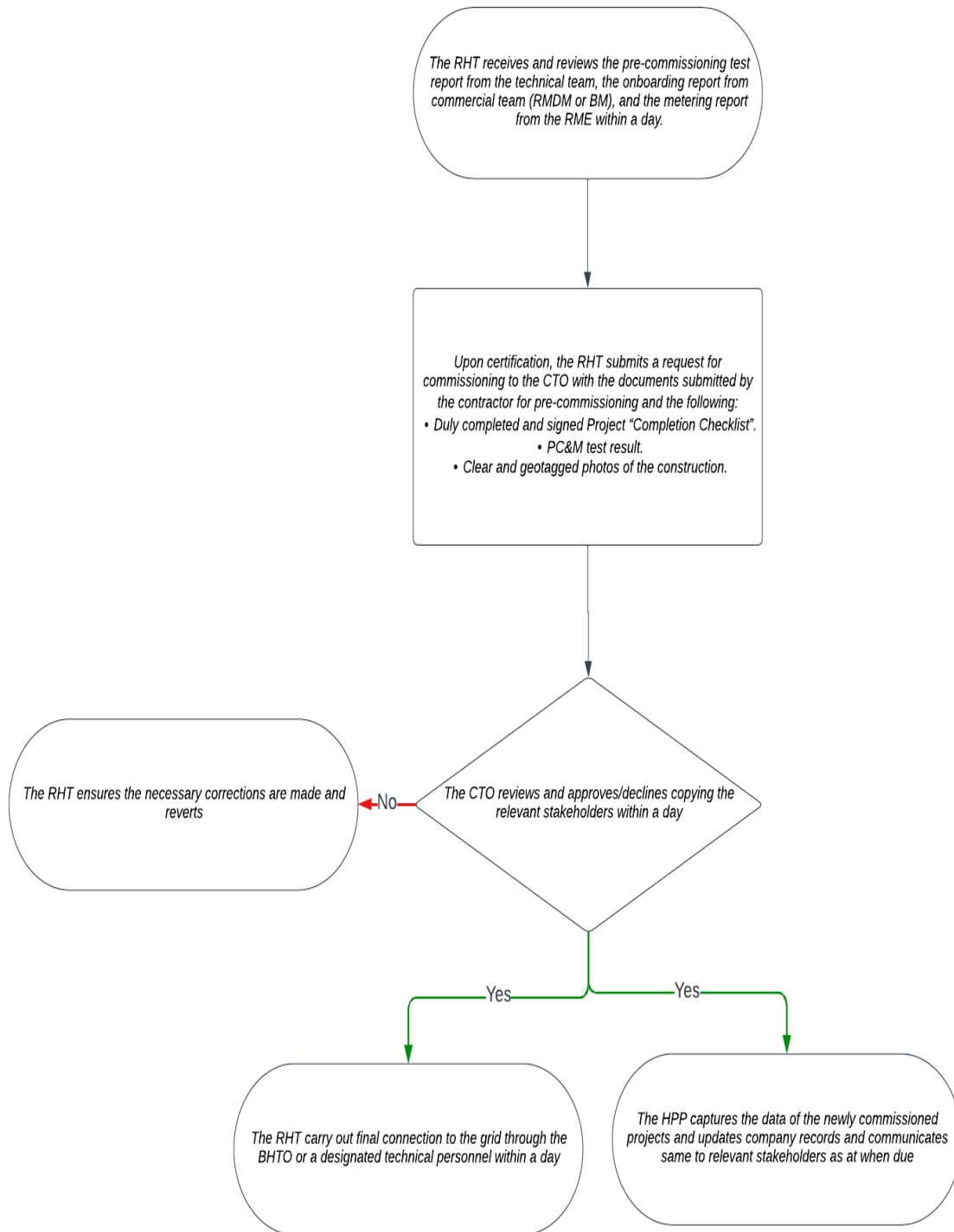




Flowchart for Pre-commissioning, Onboarding and Metering



Flowchart for Commissioning



5. PPRC MEMBERS RATIFICATION

S/N	Name	Designation	Position	Signature	Date
1	Akinleye Ogunleye	CCO	Chairman		10/7/24
2	Ewienure Agama	CFO	Member		10/07/24
3	Collins Igwe	CRCM	Member		10/7/24
4	Gilbert Owoupele	CIA	Member		10/7/24
5	Jonathan Lawani	CTO	Member		10.07.24
6	Opeoluwa Afolabi	Head, TS&CP	Member		10/07/2024
7	Felix Ndidi Nkeki	Head, GIS	Secretary		10/07/2024