



# Operating Codes No.9 (OC9): Numbering and Nomenclature

By :

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22 Jan 2014



The Malaysian Grid Code Awareness Programme Funded by  
Akaun Amanah Industri Bekalan Elektrik (AAIBE)

# Operating Codes No.9 (OC9): Numbering and Nomenclature

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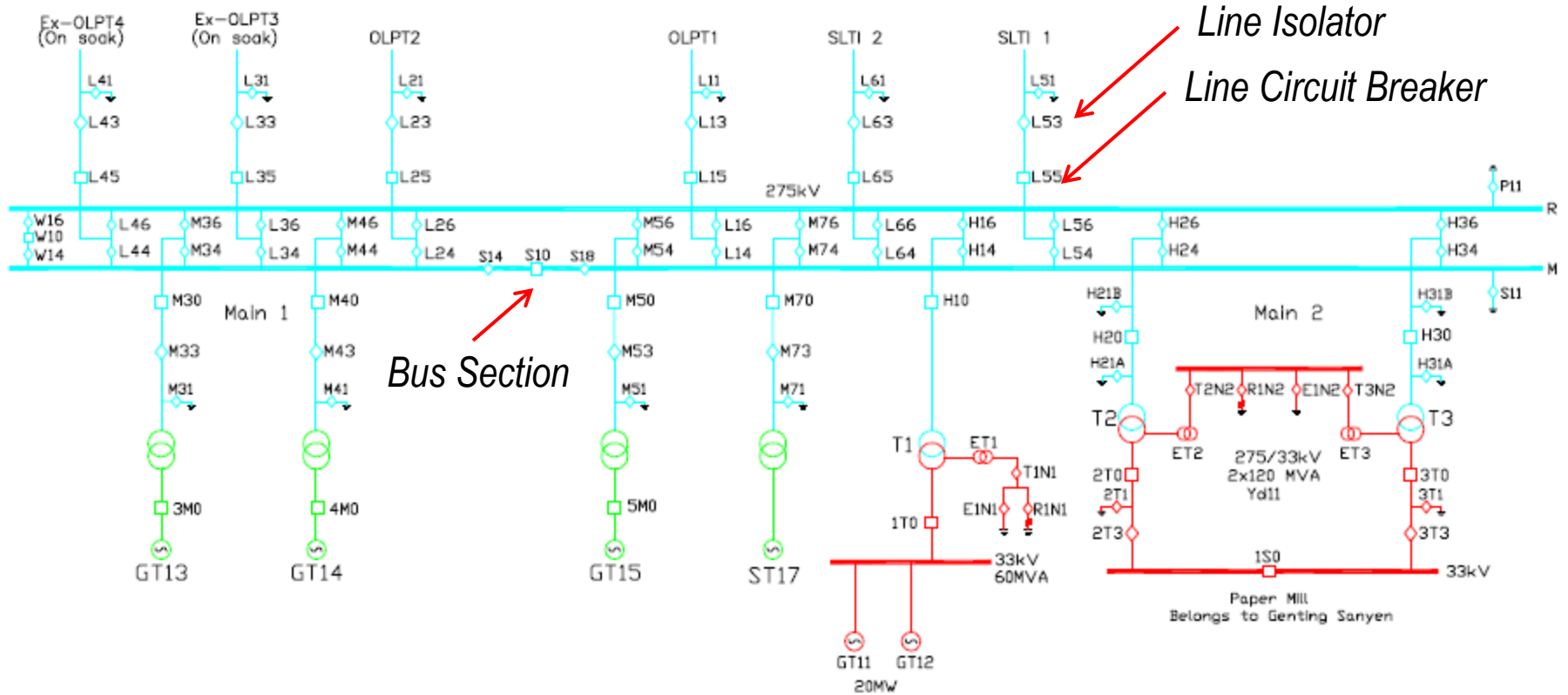
# OC 9.1 Introduction

## Substation Single Line Diagram

Substation: **KUALA LANGAT P/P**

Mnemonic: **KLPP** ← *Substation mnemonic*

Voltage: **275kV**



*Line Isolator*  
*Line Circuit Breaker*

*Bus Section*

# OC 9.1 Introduction

- Standardised numbering and nomenclature of HV Apparatus will facilitate safe operation and control of the Grid System by the GSO
- All existing and future apparatus in the Grid System under GSO control shall have numbering and nomenclature according to OC9 or as determined by the GSO.
- The numbering and nomenclature of each item of HV Apparatus shall be included in the Single Line Diagram and also for labeling of equipment including towers, apparatus, control panels and diagrams.

# OC 9.2 Objectives

- to provide consistent numbering and nomenclature for apparatus in the Grid System
- to ensure, so far as possible, the safe and effective operation of the Grid System and to reduce the risk of human error faults

# OC 9.3 Scope

Users	Definition
Generators	A person who is Licensed by the EC to generate electricity in Peninsular Malaysia.
Grid Owner	TNB Transmission that owns the high voltage backbone Transmission System and is responsible for maintaining adequate Grid capacity in accordance with the provisions of the Grid Code and License Standards
Distributors	A person who is licensed under Section 9 of the Act and is connected to the Grid System and distributes electricity for the purpose of enabling a supply to be given to any premises.
Network Operators	A person with a User System directly connected to the Transmission System to which Customers and/or Power Stations (not forming part of the Grid System) are connected, acting in its capacity as an operator of the User System, but shall not include a person acting in the capacity of an Externally Interconnected Party.
Directly Connected Customers	A Customer in Peninsular Malaysia, except for a Network Operator acting in its capacity as such and receiving electricity direct from the Transmission System.

# OC 9.4 Procedures

1. Numbering and nomenclature for HV Apparatus of the Grid Owner
2. Numbering and nomenclature for User HV Apparatus on Sites of the Grid Owner
3. Procedure for changes

## OC 9.4 Procedures (ctd.)

### 1. Numbering and nomenclature for HV Apparatus of the Grid Owner

- HV apparatus of Grid Owner on the Grid Owner Sites → follow the system used by the GSO
- HV apparatus of Grid Owner on the User Sites → follow the system used by the GSO
- GSO is responsible to determine the numbering and nomenclature convention for Transmission System
- GSO is responsible to determine the numbering and nomenclature convention for the points of interface between the Transmission system and User system



## OC 9.4 Procedures (ctd.)

### 1. Numbering and nomenclature for HV Apparatus of the Grid Owner (ctd.)

- Names and numbers can be changed from time to time due to system changes
- Users and the GSO should be aware of name and numbers change of individual items of apparatus and equipment and take all reasonable measures to ensure that labels and Single Line Diagrams are maintained in accordance with the most recent names and numbers.
- If there is change in system arrangements that affect names and numbering, naming and numbering of User's equipment shall be changed as required by the GSO.

## OC 9.4 Procedures (ctd.)

### 1. Numbering and nomenclature for HV Apparatus of the Grid Owner (ctd.)

- The GSO may, in certain circumstances, provide temporary names and numbers for equipment and apparatus to Users, the GSO shall declare the names and/or numbers as temporary.
- User's numbering and/or nomenclature should not be confused with HV Apparatus of the Grid Owner

## OC 9.4 Procedures (ctd.)

### 2. Numbering and nomenclature for User HV Apparatus on Sites of the Grid Owner

- HV apparatus of User on the Site of Grid Owner  
→ follow the system specified by the GSO
- For new HV Apparatus installation or replacement requiring new numbering and nomenclature, the User shall notify the GSO of the details and request a proposed numbering and nomenclature at least eight (8) months prior to proposed installation.

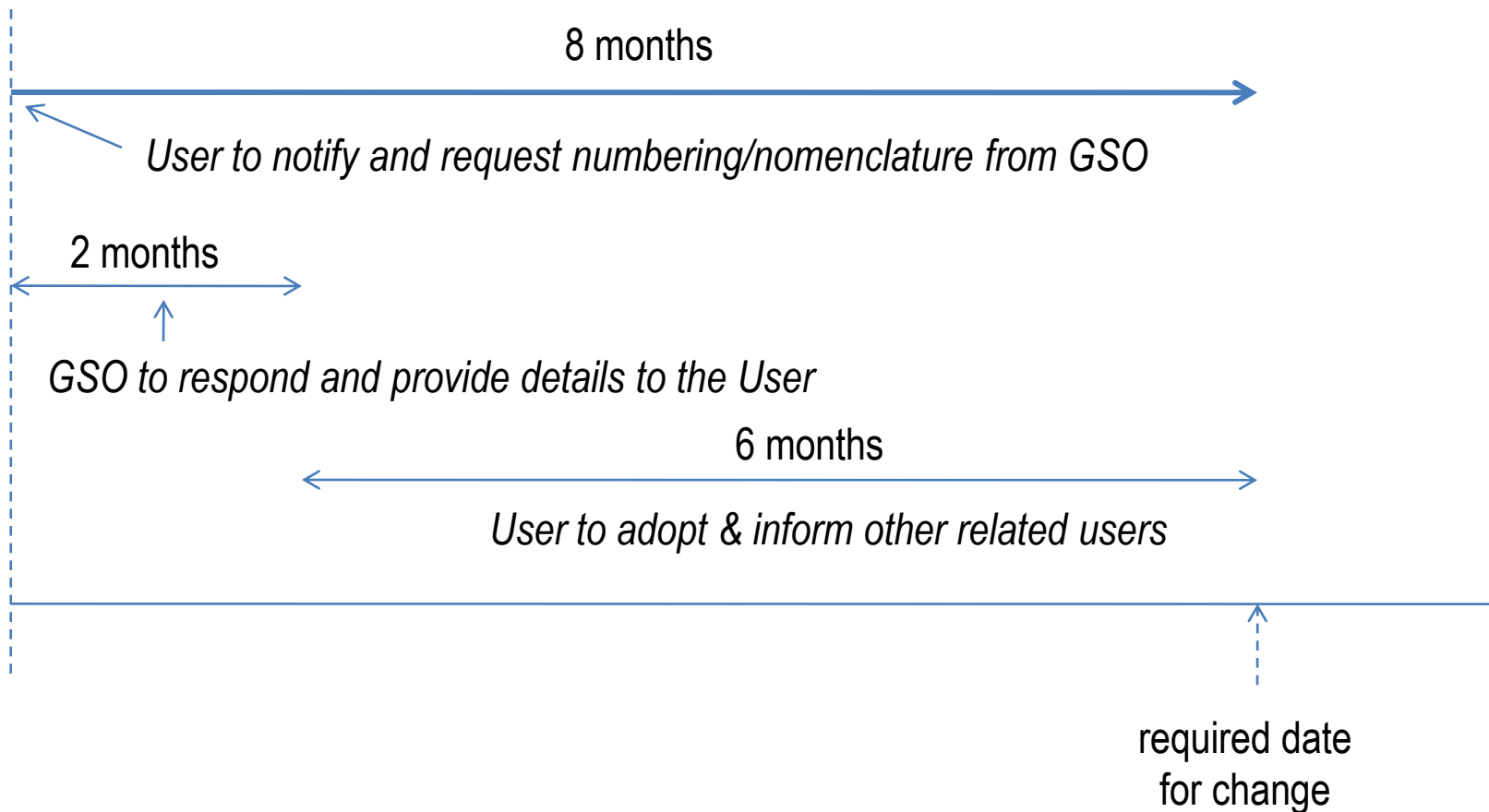
## OC 9.4 Procedures (ctd.)

### 2. Numbering and nomenclature for User HV Apparatus on Sites of the Grid Owner (ctd)

- The notification will be made in writing to the GSO and consisting of a proposed Operation Diagram
- The GSO will respond in writing to the User within two (2) months and provide details of the numbering and nomenclature which the User shall adopt for that HV Apparatus.
- The User shall then inform any other effected or related User, and shall adopt the numbering and nomenclature within six (6) months of the details being provided by the GSO.

## OC 9.4 Procedures (ctd.)

### 2. Numbering and nomenclature for User HV Apparatus on Sites of the Grid Owner (ctd)



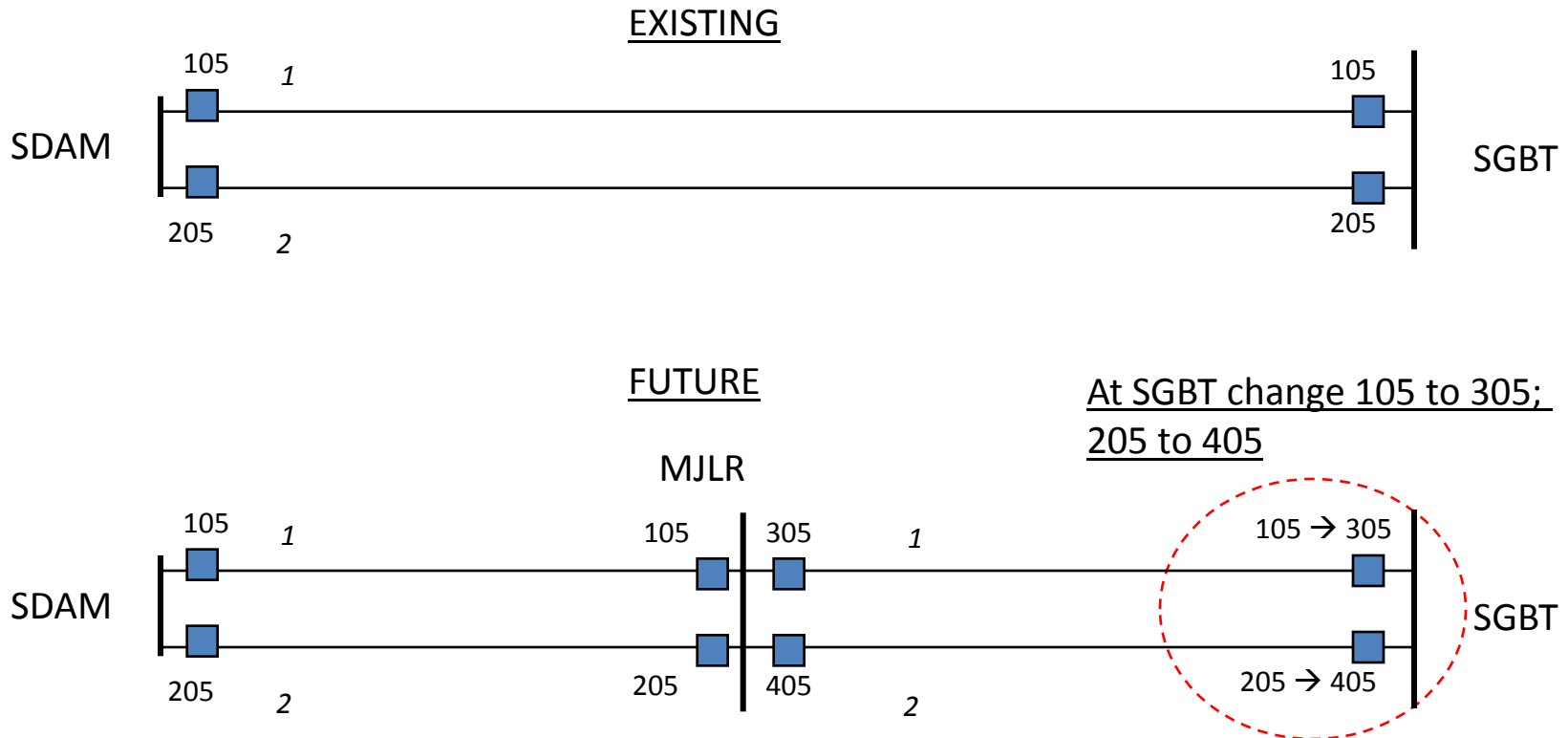
### 3. Procedures for Changes

- Where the GSO has decided that it needs to change the existing numbering or nomenclature
  - GSO will notify the User at least eight (8) months prior to the change being needed.
  - The User will respond in writing to the GSO within two (2) months of the receipt of the notification.
  - The User shall then inform any other effected or related User, and shall adopt the numbering and nomenclature within six (6) months of the details being provided by the GSO.

# OC 9.4 Procedures (ctd.)

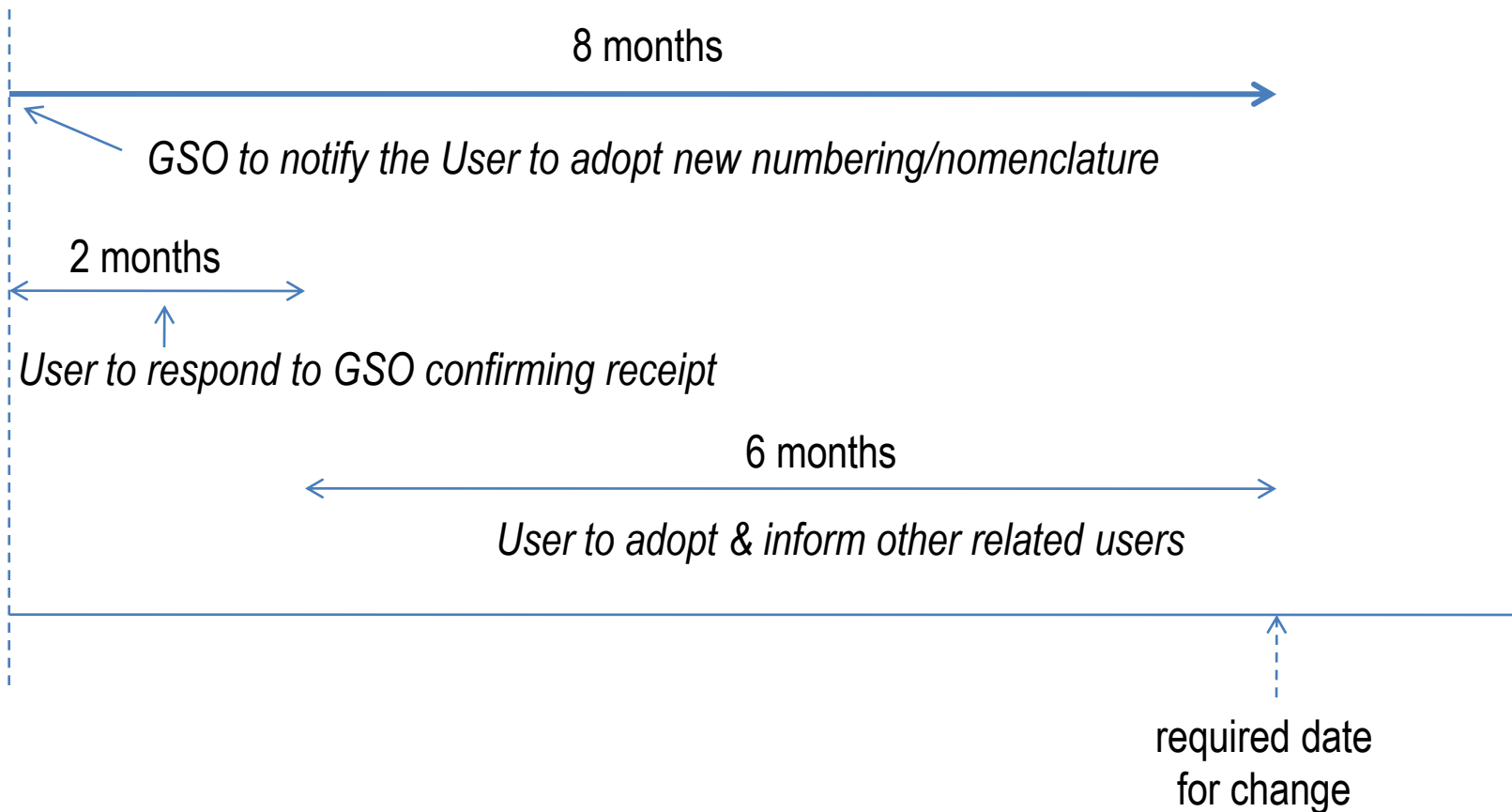
## 3. Procedures for Changes (ctd.)

### COMMON SITUATION WHEN NUMBERS NEED TO BE CHANGED



# OC 9.4 Procedures (ctd.)

## 3. Procedures for Changes (ctd.)





## OC 9.4 Procedures (ctd.)

### 3. Procedures for Changes (ctd)

- Users will be provided upon request with details of the current numbering and nomenclature system of the Grid in order to assist them in planning the numbering and nomenclature for their HV Apparatus on Sites of the Grid Owner.
- When Grid Owner or other User wants to install HV Apparatus or when is required to change the numbering and nomenclature, the Grid Owner or other User shall be responsible for the provision and erection of clear and unambiguous labelling showing the numbering and nomenclature.

## OC 9.4 Procedures (ctd.)

### 3. Procedures for Changes (ctd)

- GSO will not change its system of numbering and nomenclature in use other than to reflect new or newly adopted technology or HV Apparatus.

# Functions of System Operations Department

## In relation to MGC OC9:

- Proposal of new substations' mnemonics
- Numbering of new substations' primary equipments
- Preparation of new substations' single line diagram
- Reviewing the guidelines for numbering and nomenclature



# THANK YOU



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