

# Product Lifecycle Management

Lifecycle Solution



Team **TERASAKI**

**TERATEC LTD.**



# L i f e c y c l e

## Lifecycle Solution flow

### Installation and Start-up

Wiring work, adjustment, commissioning

### Preventive maintenance

Early detection of aged deterioration and defects through time-based maintenance (TBM) based on regular planning and condition-based maintenance (CBM) based on continuous condition monitoring.

### Spare parts supply

Sale of parts required for replacement and spares

### Repair

Repair of defective sections and replacement of parts

### Renewal & retrofitting

Carried out at the end of the durable life of the system and equipment. Modification, adjustment and verification tests as required.

### Ongoing development of our products and systems to meet current and future requirements.

- Environmental technology.
- Implementation of monitoring and control technology.

### DATA BASE

#### Service diagnosis

Connect to Industrial service data base and propose appropriate services based on service history



# S o l u t i o n

## S e r v i c e o p e r a t i o n

### INDUSTRIAL SERVICE DATA BASE

#### Industrial service management data

Customer (end user), facility to be delivered, prime contractor etc.

#### Product technical data

Final documents, drawings / Modification drawings etc.

#### Device and equipment technical data

Control and monitoring equipment / Main equipment; ACB etc.

#### Maintenance Service Data

Service report / Inspection repair history / Parts replacement history / TBM data / CBM data

Access to  
DATABASE

### Lifecycle support

#### Service diagnosis

We provide diagnosis to propose appropriate service using the device and equipment technical data for long-term safe operation.

#### Remote technical support

We continue to provide troubleshooting, parts supply, replacement support, etc. can be remotely for emergency cases until a solution is diagnosed.

#### Lifecycle management

We propose necessary inspection, parts supply, replacement, and retrofits based on equipment age, usage and installed environment.

#### [TERATEC]

Search any historical data recorded for installation

#### [TERATEC]

Search detailed product information for installation

Access

### Industrial Service DATABASE

#### [Global Service Network]

We provide services from our hubs around the world.

### Service provision

Customer

#### Service diagnosis

We recommend the appropriate service.

#### Remote technical support

We also provide remote technical support for all our equipment and products

Customer

# *As professionals who deal with circuit breaker and power distribution controls, we demonstrate our technical capabilities in field sites across the world.*

## Over viewpoint in providing good service

### [High Technology]

Response from engineers familiar with specialized fields such as periodic inspection, repair and retrofit etc.

### [Providing Security]

We work with manufacturers to provide lifecycle services.

### [Reliable Price]

By directly affiliating with the manufacturer, we provide lifecycle services at a reliable low price.

### [Respond to requests from all over the world]

We serve a wide area of the world from our bases around the globe.

- 1 Our motto is "Safety", "Security", and "Efficiency" and we provide high quality services from the customer's perspective.
- 2 'People', 'Products' and 'Resource'. We value them, are committed to safe work and contribute to zero electrical accidents.
- 3 We as a service company directly affiliated with Terasaki, the original equipment manufacturer, will continue to provide optimal services even as new products are developed.
- 4 Centering on Teratec as the control center, overseas and domestic service companies directly affiliated with the manufacturer will cooperate to provide global service support.

## Contribution to SDGs

- Our technology of industrial electrical equipment inspection and maintenance provides retrofit and renewal of equipment and devices.  
By doing so through various service works, we contribute to the prevention of accidents and improvement of electrical energy efficiency.
- We will continue to secure and develop professional human resources who support high technology and service quality.

## Lifecycle Solution — Our services line up —

- 1 All products, systems and equipment have a limited lifespan.  
● Deterioration of the product itself through use ● Production discontinuation of parts used  
We carry out periodic inspections and maintenance to extend the life of the equipment by early detection and replacement of defective parts. In addition, in preparation for long-term use, we propose modification work including retrofitting to new models.
- 2 When visiting, we carry out work with the motto of safety and security based on the environment. Along with the service report, we give you accurate maintenance advice.
- 3 We have a database of product drawings, documents, and service history. We propose a service plan based on any discontinued model information and years elapsed.
- 4 Utilising the rich knowledge and experience that we have built up over years, we are actively working to expand remote maintenance services and are striving to further improve lifecycle services.



# S E R V I C E M E N U

## 1 Circuit Breaker Preventive Maintenance

## 2 Medium and low-voltage systems preventive maintenance

## 3 Cogeneration System Preventive Maintenance

- When we conduct a comprehensive inspection of electrical facilities, we perform efficient and systematic inspections of existing products while the facilities are not operating or energized.

- We offer various proposals to achieve a reduction in the risk of failure of the following products: GAC systems (Generating Plant Management System), PLC (Programmable Logic Controller) power supply units, and relay devices.

- In order to enable continued systems operation, we propose maintenance plans that deliver reductions in total maintenance costs and extend product life.

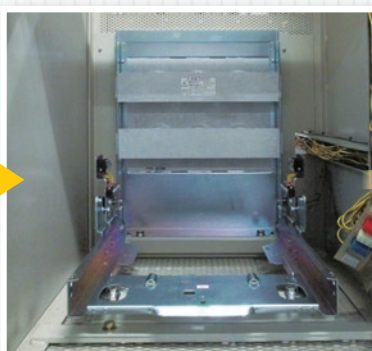


## 4 VCB, ACB and MCCB Retrofit

These are the heart of the medium and low voltage power distribution system. These are also important equipment that should ensure safety and security.



- We select the most suitable current type of ACB according to the specification of existing ACB and carry out the retrofit.
- As the basis of retrofit, instead of replacing the entire switchboard, we utilize the existing equipment in the switchboard.





# 5

## Overhaul of ACB, MCCB

We carry out disassembly, maintenance, replacement of internal parts and operation test at Teratec factory.

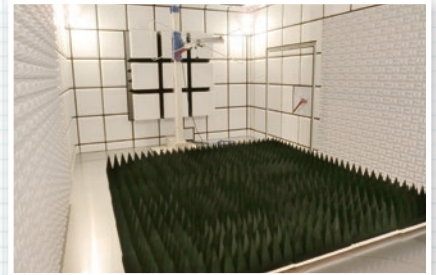


## Evaluation and testing

We carry out electrical tests and mechanical function tests to check the condition of products and parts.

At our headquarters (Terasaki Japan) we can perform EMC, shock and vibration tests using an anechoic chamber or a shielded room.

EMC testing: Testing to confirm that electrical equipment and electronic components do not malfunction due to electromagnetic radiation.



# 6

## System Renewal

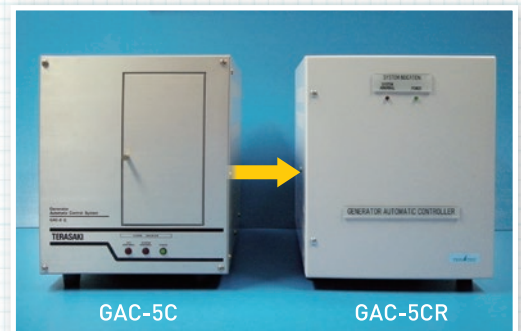
In order to extend the service life and improve the functionality of electrical facilities, we propose the renewal of the installed systems in consideration of the efficient products life cycle. As a result, 'Maintenance cost reduction', 'Stable supply of parts' can be expected.



Example) In case that existing type is GAC-5C

### Features :

GAC-5CR is compatible with GAC-5C by making dimensions and mounting dimensions exactly same as GAC-5C. Therefore, there is no need to modify the peripheral circuit and replacement work is possible in a shortest time.





# 7

## Supply of maintenance parts

We supply all Terasaki products or parts utilised within Terasaki systems.



Various ACB parts



Smart breaker



Protective relay(Ry)



GAC-21



Relay device and multimeter



Multi Functional Synchronizer

# 8

## Various modification

we propose the optimum modification plan to meet the requirements.

We keep a close watch on the operation of the facility, and pay close attention to the schedule and carry out planned and efficient modification work.



# 9

## Service training

- We offer training programs of skill acquisition in inspection and maintenance of ACB and distribution board.
- We offer online training, using our electrical equipment.
- You can also carry out training on basic knowledge of Terasaki products and product operation.





**Teratec is engaged in product lifecycle related service business for the products of Terasaki Electric Co., Ltd. (Terasaki).**

**SERVICED PRODUCTS**

**Terasaki's industrial power distribution control system and circuit breaker**

**<Main product group>**

**Low voltage circuit breaker**

- Air circuit breaker (ACB)
- Molded case circuit breaker (MCCB)

**Co-generation system (CGS)**

- High voltage switch gear and control gear
- Power distribution control system

**Control center (MCC)**

Generator Automatic Control System (PMS, GAC series)

Vacuum circuit breaker (VCB)  
Protective relay (Ry)  
Control devices

Electromagnetic contactor (MC)  
Control devices

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