

# Restore High Voltage Outages

Course Code: ENO62

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## COURSE OBJECTIVES

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Upon completion of this course, participants will be able to:

- Apply the proper procedure to restore outages in a distribution grid high voltage network

## MAIN CONTENTS

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- Tools, test instruments and equipment for carrying out restoration of high voltage outages
- Types and causes of faults
- Interpretation/analysis of protective relay indications while tracing for faulty cable
- Identification of faulty cable with relevant tests
- Operation of withdrawable circuit breakers, non-withdrawable circuit breakers, load break and fuse switch/switch fuse during the isolation of faulty cable
- Procedure for restoring supply to affected customers
- Consequences of low voltage feedback and operational requirements
- Post activity reporting
- Electrical safety precautions while working with high voltage (HV) distribution equipment

## METHODOLOGY

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Lecture

Practical: Set up test equipment, use of test instruments and equipment, analyse protective relay indications, isolate fault cable, fill up fault report form

## TARGET AUDIENCE

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Engineering and technical staff who are required to carry out restoration of HV outages

## ASSUMED KNOWLEDGE (Recommended)

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- Understand the relevant Singapore Standards and regulations (eg. SS538, Electricity Act, etc.)
- Apply the SPPG Rules for Control and Safe Operation of High and Low Voltage Apparatus and relevant SPPG SOPs
- Read and interpret single line drawings, electrical drawings and circuitries
- Apply electrical principles (e.g., principle of the circulating current, IDMTL/ DTL characteristics, core balance CT, etc)
- Able to identify the different types of high voltage underground cables/equipment
- Able to listen, read, speak and write English equivalent to Employability Skills System (ESS) level 7 proficiency
- Manipulate numbers equivalent to Employability Skills System (ESS) level 7 proficiency

## COURSE DETAILS

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Duration	: 2.5 days (17.5 hours) / 8:30am – 5:30pm
Mode of Delivery	: Face-to-Face
Certification	: SIPG Certificate of Completion
PDU by PE Board	: 15
Additional Requirement/s	: Trainee is required to wear PPE during Practical session. PPE includes: Safety Shoes, Fire Retardant Clothing (FRC) and Helmet.

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## COURSE FEES

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Full Course Fee	:	S\$2,750 (before GST)
For Singapore Citizens/PR/LTVP+*	:	N.A.
For Singapore Citizens (40 years old and above)	:	N.A.

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## ADDITIONAL REMARKS

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- Trainee must attain at least 75% attendance rate and pass the assessment to receive Certificate of Completion and funding grant (if applicable).
- Subsidy of up to 70% is applicable for Singapore Citizens, Permanent Residents or Long-Term Visitor Pass Plus (LTVP+) Holders, subject to funding agency's approval.
- Enhanced subsidy of up to 90% is applicable for Singapore Citizens aged 40 years and above, subject to funding agency's approval. Note that GST payable will be computed from fee after 70% funding.
- Professional Development Unit (PDU) is applicable for Professional Engineers registered under the Professional Engineers (PE) Board only.
- All published fees are subject to prevailing GST.

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## CONTACT US

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For more information, please contact SIPG at +65 6916 7930 or email [training-institute@spgroup.com.sg](mailto:training-institute@spgroup.com.sg).

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