

CONTENTS

Course Planner	Page 1
Introduction	Page 6
Administration	Page 6
Contacts	Page 7
Location	Page 7
Conditions of Sale	Page 8
About City & Guilds and EAL	Page 9

Section 1: High Voltage Courses

S1	Introduction to the Safe Operation of High Voltage Power Systems	Page 10
S2	Awareness of the Operation of High Voltage Power Systems	Page 11
S3	Basic Refresher Training in the Safe Operation of High Voltage Power Systems	Page 12
S4	Fundamentals of the Safe Operation of High Voltage Power Systems	Page 13
S5	Advanced Refresher (Consolidation) training in Safe Operation of High Voltage Power Systems	Page 14
S6	Safe Operation Review & Competence Assessment	Page 15
S8	The Safe Application of High Voltage Electrical Testing & Subsequent Receipt of Sanction for Test Documents	Page 16
S9	Practical Introduction to the Safe Operation of High Voltage Switchgear	Page 17
MAR1	Introduction to the Safe Operation of Marine & Offshore High Voltage Power Systems	Page 18
MAR2	Introduction to the Safe Operation of Marine High Voltage Power Systems In Remote Operated Vehicles (ROVs)	Page 19
MAR4/ OS4	Fundamentals of the Safe Operation of Marine/Offshore High Voltage Power Systems	Page 20
MAR5	Principles of the Safe Operation of Marine/Offshore High Voltage Power Systems	Page 21
MAR6	Control and Management of Offshore and Marine High Voltage Power Systems	Page 22

M1 Basic Principles of the Maintenance of Electrical Switchgear Page 23

Section 2: Electrical Protection Courses

P1 Protection of Electrical Power Systems Page 24

P2 Appreciation of the Protection of Electrical Power Systems Page 25

Section 3: Testing Courses

T1 Electrical Pressure Testing Page 26

T2 Earth Electrode Testing Page 27

T3 Transformer Testing and Maintenance Page 28

T5 Cable Identification/Spiking Page 29

Section 4: Low Voltage Courses

A1 Electricity at Work Regulations 1989 Page 30

L1 Live Testing on Systems up to 1000 Volts AC Page 31

L2 Live Testing on AC & DC Systems up to 1000V AC / 1500V DC Page 32

S11 Low Voltage Authorised Person Training Page 33

C&G Management of Electrical Equipment Maintenance Page 34
2377-01 (Portable Appliance Testing, City & Guilds 2377-001)

C&G Inspection and Testing of Electrical Equipment Page 35
2377-02 (Portable Appliance Testing, City & Guilds 2377-002)

C&G Certificate in the Requirements of Electrical Installations Page 36
2382-10 BS7671:2008: (IEE 17th Edition Wiring Regulations)
City & Guilds 2382-10

C&G Certificate in the Requirements of Electrical Installations Page 37
2382-20 BS7671:2008: (IEE 17th Edition Wiring Regulations)
City & Guilds 2382-20. Update course for 16th Edition

LVTI Practical Introduction to the Safe and Correct Use of Low Page 38
Voltage Test Instruments

C&G	Inspection, Testing & Certification of Electrical Installations	Page 39
2391-10	BS7671:2008: City & Guilds 2391-10	
	Accredited Electrical Inspectors, Fairground/Amusement Device	Page 41
ADIPS	Amusement Device Inspector Training & Assessment	Page 42
HAZ1	Safe Use of Electrical Equipment in Hazardous Areas	Page 43
E1	Basic Electricity	Page 44
E2	Electrical Safety Awareness	Page 45
E4	Electrical for Non-Electrical Personnel	Page 46
Section 5:	Customised Courses	Page 47
Section 6:	High Voltage Safety Rules/Documents Audit & Development	Page 47

Additional dates for all courses can be arranged to suit the needs of individual clients

Course Planner 2010: The following table shows course commencement dates

	S1	S2	S3	S4	S5	S6	S8	S9
Jan				18 th			18 th	12 th & 26 th
Feb	8 th	22 nd		1 st & 15 th				9 th & 23 rd
Mar	29 th	29 th	1 st	1 st & 15 th	15 th	22 nd		9 th & 23 rd
Apr			6 th	19 th & 26 th	7 th	26 th	26 th	13 th & 27 th
May	4 th	7 th	6 th	17 th				11 th & 25 th
Jun	1 st			14 th	21 st	24 th		15 th
Jul	26 th	9 th	5 th	19 th			14 th	13 th & 27 th
Aug	31 st		16 th	9 th & 23 rd	2 nd			10 th & 24 th
Sep	27 th	3 rd		13 th			13 th	14 th & 28 th
Oct		18 th	19 th	4 th & 18 th	25 th			12 th & 26 th
Nov	8 th			1 st & 15 th	22 nd		29 th	9 th & 30 th
Dec	13 th			6 th				7 th

Course Planner 2010: The following table shows course commencement dates

	MAR1	MAR2	MAR4/OS4	MAR5	MAR6	M1	P1	P2
Jan			25 th					
Feb		11 th	8 th & 22 nd		15 th	22 nd	1 st	15 th
Mar	29 th		8 th & 22 nd					29 th
Apr		1 st	12 th	12 th			19 th	
May	17 th	6 th	10 th & 24 th		10 th		24 th	4 th
Jun			21 st	14 th			28 th	
Jul	21 st	19 th	12 th			5 th		
Aug	9 th		2 nd & 16 th				23 rd	31 st
Sep		20 th	20 th	6 th	13 th	20 th		
Oct	4 th		11 th & 25 th				11 th	
Nov		12 th	22 nd	15 th				1 st
Dec								

Course Planner 2010: The following table shows course commencement dates

	T1	T2	T3	T5	A1	L1	L2	S11
Jan	25 th	26 th	27 th	29 th		18 th		25 th
Feb					22 nd		15 th	
Mar	29 th	30 th	31 st		22 nd	15 th		8 th
Apr				1 st				19 th
May	17 th	18 th	19 th	21 st	4 th		17 th	10 th
Jun					18 th	7 th		21 st
Jul					1 st			
Aug						31 st	16 th	2 nd
Sep					17 th		27 th	
Oct					20 th			4 th
Nov	1 st	2 nd	3 rd	5 th		8 th	24 th	
Dec	6 th	7 th	8 th	10 th		6 th		

Course Planner 2010: The following table shows course commencement dates

	CG2377-01	CG2377-02	CG2382-10	CG2382-20	LVTI	CG2391-10 (full time)	CG2391-10 (part time)
Jan	13 th	14 th	25 th	21 st	25 th		15 th
Feb			15 th	8 th		8 th	12 th
Mar	4 th	5 th	15 th	18 th	1 st	8 th	
Apr		29 th		1 st			
May	20 th	21 st	24 th	13 th	17 th	24 th	7 th
Jun			21 st	17 th			18 th
Jul	26 th	27 th	14 th	5 th	12 th	19 th	16 th
Aug			23 rd	5 th	2 nd	9 th	
Sep	6 th	7 th	27 th	16 th			
Oct	4 th	5 th	25 th	14 th			
Nov	1 st	2 nd	15 th	18 th			
Dec	13 th	14 th	6 th	9 th			

Course Planner 2010: The following table shows course commencement dates

	ADIPS	HAZ1	E1	E2	E4
Jan					
Feb	15 th – 17 th	1 st	22 nd		
Mar		22 nd			22 nd
Apr		6 th	26 th	12 th	
May	4 th – 6 th	4 th		17 th	
Jun				14 th	1 st
Jul		12 th		7 th	
Aug		31 st	9 th		
Sep	20 th – 22 nd			20 th	8 th
Oct		25 th	18 th		
Nov			15 th	8 th	
Dec			13 th		

Introduction

The Faraday Centre Limited is a privately owned company located in the north east of England, specialising in the provision of Electrical Power Training, either at our purpose designed facilities, which are equipped with a wide range of operational high/low voltage electrical training equipment or at the client's site, in the UK and worldwide. Courses are delivered by qualified tutors, all with many years electrical engineering experience.

Courses include practical “hands on” exercises as well as theoretical lectures. An optional individual, comprehensive competence based theoretical and practical assessment is available at additional cost. Candidates successfully completing training courses would receive a Faraday Centre attendance/competence, City & Guilds or EAL (EMTA Awards Ltd) certificate as appropriate.

The calendar overleaf details the public courses scheduled for the year 2010, taking place at The Faraday Centre's UK based facilities. Please note that additional dates can be arranged to meet particular needs.

IET Endorsement:

The Faraday Centre Ltd have been an IET Endorsed Training Provider for many years, however, The Institution of Engineering & Technology, IET, (previously known as the IEE) are ceasing their training provider endorsement service with effect from 31st December 09. Consequently, no training provider will be IET endorsed after this date and, therefore, all reference to IET endorsement must be removed by 30th June 2010. The Faraday Centre Ltd regret the ceasing of the endorsement service, but would like to thank the IET for the service offered over the last several years.

The Faraday Centre is a City & Guilds Approved Centre, EAL Approved (VRQ) Centre, IMCA Member (International Marine Contractors Association), Member of ECA (Electrical Contractors Association), MoD's ELCAS Approved Training Provider, ISO 9001 registered company, a member of RoSPA and British Standards Institution (BSI).

Thomas-Faraday Training Ltd, Cyprus is an associated company of the Faraday Centre Ltd UK and was established in 2006 as part of our international expansion. Located in the centre of Limassol, the 6000 square feet (1828 square metres) training facility is fully equipped to offer a wide range of electrical training programmes similar to those delivered in the UK.

Administration

Course bookings may be made initially by telephone but these should be confirmed by fax, email or letter prior to the course starting date.

Unless notified to the contrary, courses will commence at 09.00 hours and conclude at 16.30 hours. The course fee includes light lunch. With prior notice, special arrangements may be possible to meet specific dietary requirements such as vegetarian, Halal, etc. We will endeavour to meet religious requirements such as prayer mat/quiet room etc. Please note that, in accordance with UK law, smoking is not permitted in any of The Faraday Centre buildings or vehicles and seat belts must be used when in the vehicles.

Contacts

Telephone: +44 (0)1642 467236
Fax: +44 (0)1642 454197
E Mail: training@faradaycentre.co.uk
Website: www.faradaycentre.co.uk

Address: Head Office
(For all correspondence) Unit 3, Stephenson Court, Skippers Lane Industrial Estate
Including Cyprus centre) South Bank, Middlesbrough, TS6 6UT
United Kingdom

Managing Director: Mr. Barry Thomas
Financial Director: Mrs. Lynnda D. Thomas
Group General Manager: Mr. Suhail Mitoubsi
Training Facilities Manager: Mr. Graham J Wilson
Group Commercial Manager: Mr. Subhan Beg
Course Bookings: Miss Jennifer Millard, Miss Jenna Clayton
Accounts: Miss Magda Kontek

Location

Middlesbrough – North East England (UK)

By Road : Aberdeen	280 miles	(450 km)
Darlington	18 miles	(28 km)
Glasgow	200 miles	(321 km)
London	270 miles	(434 km)
Manchester	125 miles	(201 km)
Newcastle City	50 miles	(80 km)
Newcastle Airport	52 miles	(83 km)
Durham Tees Valley Airport	15 miles	(24 km)
York	50 miles	(80 km)

International, by air: (Direct flights to Durham Tees Valley Airport from Aberdeen, Dublin and Amsterdam).

Abu Dhabi	3397 miles	(5467 km)
Amsterdam	298 miles	(479 km)
Athens	1700 miles	(2735 km)
Kuala Lumpur	6757 miles	(10874 km)
New York	3640 miles	(5857 km)
Brussels	345 miles	(556 km)
Lagos	3217 miles	(5177 km)
Paris	421 miles	(677 km)
Limassol	2134 miles	(3435 km)

Conditions of Sale

- 1 Course bookings may be made initially by telephone but are not confirmed until receipt of a fully completed and signed order form complete with client's purchase order number. To guarantee availability of places, this confirmation must be received 14 days prior to the course commencement.
- 2 All confirmed bookings will be acknowledged and will include joining instructions, which the clients contact must pass to each of his delegates.
- 3 Clients may substitute candidates, without penalty, up to the course commencement date, providing written notification is received.
- 4 Where bookings include transport/accommodation, it is the client's responsibility to advise The Faraday Centre of local transport requirements at least one week prior to course commencement.
- 5 Where bookings include accommodation, any subsequent cancellation of that accommodation will be subject to the hotel's cancellation policy.
- 6 Liability for full course fees becomes due 7 days prior to the course commencement date. Payment terms must be specified at the time of booking. Failure to pay in the specified time will be subject to the "Late Payment of Commercial Debts (Interest) Act 1998" plus an administrative fee of £50.00 and the withdrawal of any early payment discount offered.
- 7 Failure to specify payment terms will result in fees being charged on the basis of the highest rate in force.
- 8 No fee will be charged for cancellations received in writing by The Faraday Centre Ltd at least 14 days prior to the course commencement. A cancellation charge of 50% of the full course fee will be charged for cancellations within 14 days, and 100% charge for cancellation within 7 days.
- 9 For Faraday based courses, unless stated to the contrary, fees include course manuals, certificates and a light lunch.
- 10 Fees are quoted exclusive of U.K. Government Value Added Tax, which is charged as appropriate and is applicable to all training delivered in the United Kingdom.
- 11 All courses are offered on a basis of there being sufficient candidates to justify holding the course. Where this or other circumstances force The Faraday Centre Ltd to cancel a course, liability shall be limited to a refund of any fees paid and alternative dates suggested.
- 12 Course certificates are despatched to the clients contact following completion of the course and payment of the invoice.
- 13 The Faraday Centre Ltd cannot accept responsibility for the competence level of any particular candidate upon completion of the course.
- 14 Bespoke course fees are subject to consultation and negotiation.
- 15 All delegates are required to observe the Health & Safety Policy of The Faraday Centre Ltd.
- 16 Unless agreed in writing to the contrary, these conditions of sale shall take precedence over any other contractual conditions for all services supplied by The Faraday Centre Ltd.
- 17 Unsatisfactory account settlement, within the timescale specified, may result in the withdrawal of credit facilities to a defaulting client.
- 18 These conditions of sale shall be subject to interpretation in accordance with English Law.

About City & Guilds

City & Guilds was founded in 1878 to establish a national system of technical education. It is the UK's leading provider of vocational qualification, offering over 500 awards across a wide range of industries and progressing from entry level to the highest levels of professional achievement.

City & Guilds employs over 1000 people with over 8500 centres in 100 countries. The organisation awards over 1.8 million certificates every year and City & Guilds is recognised by employers worldwide for providing qualifications that offer proof of the skills they need to get the job done.



About EAL

EAL (EMTA Awards Ltd) is the UK's leading awarding body for engineering National Vocational Qualifications (NVQs) and their Scottish equivalents (SVQs). Over 70% of engineering vocational qualifications are awarded by EAL.

EAL offers vocational qualifications to help electrical workers and building services engineers to further their careers and support business growth. As a leading-edge awarding body, EAL works with SummitSkills, the Sector Skills Council for building services, and key organisations like the Electrical Contractors Association (ECA) and Electrical Training Trust (ETT) to help candidates show their competence in various trades.

EAL is recognised by the Qualifications and Curriculum Authority (QCA) and the Scottish Qualifications Authority (SQA).



Section 1: High Voltage Courses

S1 Introduction to the Safe Operation of High Voltage Power Systems (Limited High Voltage Authorisation)

Duration: 3 days

Introduction: This training programme requires a basic level of electrical knowledge. Upon successful completion of the course, subject to client approval, candidates will be able to enter high voltage switchrooms and perform limited switching operations, etc, on high voltage equipment. Normally they would be permitted to issue limited safety documents e.g. isolation documents, but not to issue permits to work, sanction for test etc.

Participants: Electrical/non-electrical personnel required to carry out restricted HV switching operations with limited safety document issuing responsibilities.

Aim: To introduce personnel to the concept of electrical power systems to enable them to enter substations/switchrooms, carry out restricted switching operations, monitor the performance and condition of the system (including relay operation) in a safe and competent manner. The course is intended to provide knowledge and awareness of limited safety document issuing responsibilities.

Outline Contents

- Safety requirements
- Electrical hazards and precautions
- Arrangement of high voltage substations/switchrooms
- Emergency conditions
- Philosophy of high voltage distribution
- Operational and safety features of switchgear
- Electricity at work regulations 1989
- Limited Operational Procedures
- High voltage safety rules
- Introduction to electrical protection
- Practical switching exercise (1)
- Case studies
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

8 th – 10 th Feb	29 th – 31 st Mar	4 th – 6 th May	1 st – 3 rd Jun	26 th – 28 th Jul
31 st Aug – 2 nd Sep	27 th – 29 th Sep	8 th – 10 th Nov	13 th – 15 th Dec	

S2 Awareness of the Operation of High Voltage Power Systems

(Access to substations & switchrooms)

Duration: 1 day

Introduction: This course is designed for electrical and non-electrical personnel with no previous experience of electrical HV power systems, who require substation/switchroom access for defined duties within substations/switchrooms. Persons who would benefit from this course are those required to work in the vicinity of, but not on electrical power equipment. The course covers the safety requirements for working in the vicinity of High Voltage electrical equipment, it highlights electrical hazards and the precautions necessary to avoid danger. It also covers the arrangement of equipment within substations and switchrooms, in addition to safety procedures, understanding of key safes and Multi Hasp systems and steps to be taken in an emergency.

Participants: Electrical/non-electrical personnel with no previous experience of electrical power systems, who require access to areas containing High Voltage Electrical Apparatus with a view to undertaking specific duties.

Aim: To enable personnel to enter substations and switchrooms for specific duties and to recognise the dangers associated with high voltage power equipment. These duties may include: meter reading, switchroom lighting, telephone repairs, cleaning, etc.

Outline Contents

- Safety requirements
- Electrical hazards and precautions
- Arrangement of high voltage substations
- Basic high voltage safety procedures
- The role of protective relays
- Emergency conditions
- Demonstration of switchgear principles
- Electrical incidents
- Course review

Certification: Candidates who successfully complete the end of course competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

22 nd Feb	29 th Mar	7 th May	9 th Jul
3 rd Sep	18 th Oct		

S3 Refresher Training in the Safe Operation of High Voltage Power Systems

Duration: 2 days

Introduction: This is a refresher programme designed for personnel who have limited high voltage authorisation. Limited authorisation is taken to be authorisation for work on single ended circuits, such as motor drives. It is not intended to cover refreshers for persons carrying out work on interconnected distribution systems which include transformers, feeders or ring main systems.

Participants: Personnel experienced in carrying out routine switching duties associated with the safe operation of electrical power systems with limited authorisation and have previously attended courses such as the S1.

Aim: To provide refresher training to authorised personnel required to carry out routine switching operations and issue of isolation documents associated with single end circuits

Outline Contents

- Electrical statutory regulations
- Operational Procedures
- High Voltage Safety Rules
- Interpretation of basic electrical protection under fault situations
- Safety documents and lock out/tag out procedures
- Practical switching exercises
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

1 st – 2 nd Mar	6 th – 7 th Apr	6 th – 7 th May	5 th – 6 th Jul
16 th – 17 th Aug	19 th – 20 th Oct		

S4 Fundamentals of the Safe Operation of High Voltage Power Systems

(Full authorisation)

Duration: 5 days

Introduction: This training programme requires a good foundation of electrical knowledge. It is designed to bring candidates up to a “Senior Authorised” level. However, the course does not provide the “authorisation” itself, since this must be issued by the owner of the plant.

Candidates may find it beneficial to attend our S9 course, *Practical Introduction to the Safe Operation of High & Low Voltage Switchgear*, as a pre-cursor to this course. (see page 17).

Participants: Personnel with a prior knowledge of the inspection, operation, maintenance, and repair of electrical power systems and who are to be responsible, as an authorised/senior authorised person, for switching and issue of safety documents (e.g. electrical permits to work).

Aim: To improve the understanding of HV/LV power systems including statutory regulations, safe operation, protection and fault diagnosis on a wide range of power equipment. Also to enable candidates to perform HV switching operations on HV networks and to prepare them for HV authorisation in accordance with their companies’ safety rules/regulations.

Outline Contents

- Statutory regulations
- Electrical hazards and precautions
- Arrangement of high voltage systems
- Operational and safety features of switchgear
- High voltage safety rules
- Issue and control of safety documentation
- Safety Lockout Procedures, Key Safes/Multi Hasp locking devices (Isoloks)
- Application of electrical protection
- Protection Practical Fault Exercises
- Emergency conditions
- Practical exercises (3-switching/ safety documents/ Switching Programmes).
- Fault incidents
- Case studies
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

18 th – 22 nd Jan	1 st – 5 th Feb 15 th – 19 th Feb	1 st – 5 th Mar 15 th – 19 th Mar	19 th – 23 rd Apr 26 th – 30 th Apr
17 th – 21 st May	14 th – 18 th Jun	19 th – 23 rd Jul	9 th – 13 th Aug 23 rd – 27 th Aug
13 th – 17 th Sep	4 th – 8 th Oct 18 th – 22 nd Oct	1 st – 5 th Nov 15 th – 19 th Nov	6 th – 10 th Dec

S5 **Advanced Refresher (Consolidation) Training in the Safe Operation of High Voltage Power Systems**

Duration: 3 days

Introduction: This is an advanced training programme that requires a good foundation of electrical knowledge. It is designed to refresh the knowledge, skills and experience of the candidates relating to safe practices and legislation within the high voltage and electrical safety industry.

Participants: Personnel experienced in carrying out High Voltage switching duties and testing, as an authorised/senior authorised person, associated with the safe operation of electrical power systems and who previously attended a course such as the S4.

Aim: To provide refresher training to authorised/senior authorised personnel with a responsibility for carrying out High Voltage switching duties and the issue of permits to work/sanctions for test associated with such work.

Outline Contents

- Electrical statutory regulations
- Causes of electrical accidents
- Electrical hazards and precautions
- Case studies
- Application of electrical protection
- An outline of electrical testing
- Maintenance requirements
- Practical exercises
- Fault situations and investigation
- Fault switching exercises
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

15 th – 17 th Mar	7 th - 9 th Apr	21 st – 23 rd Jun	2 nd - 4 th Aug
25 th – 27 th Oct	22 nd – 24 th Nov		

S6 Safe Operation Review & Competence Assessment

Duration: 1 day

Introduction: This is a practical programme designed to assess candidates' safe switching practices when operating on High and Low voltage power systems. It is intended for candidates requiring independent external assessment of their level of competence.

Participants: Electrical engineers / supervisors / technicians / electricians responsible for the inspection, operation, maintenance and repair of High and Low voltage systems.

Aim: To assess the competency of electrical personnel prior to becoming an authorised person for safety and operational switching duties of electrical power systems. It includes theoretical, verbal and practical assessments. This is an individual assessment and most dates can be arranged to suit clients' requirements.

Outline Contents

- Determination of required individual competence levels
- Summary of electrical protection
- Operational and safety features of switchgear
- Practical demonstration by tutor of appropriate switchgear.
- Individual practical competence exercises, including switching/safety document issue, as appropriate.
- Theoretical paper
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments, will receive a Faraday "Competence" certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday "Attendance" certificate.

Dates: For courses undertaken at our UK training centre

22nd Mar

26th Apr

24th Jun

Other dates are available on request.

S8 **The Safe Application of High Voltage Electrical Testing & Subsequent Receipt of Sanction for Test Documents**

Duration: 3 days

Introduction: This course is designed to enable those who are required to carry out testing on high voltage equipment to become authorised to receive sanction for test documents relating to safe practices and legislation within the high voltage and electrical safety industry.

Participants: Personnel with prior knowledge of the inspection, operation, maintenance and repair of high voltage electrical power systems, who are to be responsible, as an authorised/senior authorised person, for electrically testing systems following the receipt of sanction for test documents.

Aim: To provide candidates with the skill level required to enable them to be authorised to receive sanction for test documents. It is **not** intended to train them in various types of testing, e.g. primary/secondary injection, pressure testing, etc.

Outline Contents

- Hazards of electricity
- Electricity at Work Regulations 1989 (UK)
- Operational and safety features of switchgear
- Safety lockout procedures
- Case studies
- Operational procedures
- The role of protection relays
- Proving dead/discharging
- Safety during testing
- Practical exercises
- Competency assessment
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

18th – 20th Jan

26th – 28th Apr

14th – 16th Jul

13th – 15th Sep

29th Nov – 1st Dec

S9 Practical Introduction to the Safe Operation of High & Low Voltage Switchgear

Duration: 3 days

Introduction: This course is designed specifically for individuals with little or no previous experience in high voltage switching. It focuses on the practical (hands on) element of Switching and is predominately workshop rather than classroom based. This course should be undertaken as a pre-cursor to the S4/MAR 4 Full authorisation courses.

Participants: Electrical/non- electrical personnel who require practical (hands on) experience of switching on high voltage and low voltage switchgear prior to undertaking future authorisation courses.

Aim: To introduce personnel to the fundamental concepts of high voltage switching to enable them to familiarise themselves with operational protocols and potential physical constraints prior to receiving full authorisation training.

Outline Contents

- Operational procedures
- Single end drive motor isolations
- 11/3.3kV & 11/0.415kV transformer isolations
- Ring mains and ring main units
- Voltage transformer isolation
- Circuit main earth application protocols
- Additional earth application protocols
- Dependant & Independent power operations
- Stored energy operations
- Electrical safety documents
- Key safes and Multi Hasp locking (Isolok) systems
- Abridged high voltage safety rules
- Course review

Certification: Candidates will receive a Faraday “Attendance” certificate which should be produced when attending a full authorisation course at a later date.

Dates: For courses undertaken at our UK training centre

12 th – 14 th Jan 26 th – 28 th Jan	9 th – 11 th Feb 23 rd – 25 th Feb	9 th – 11 th Mar 23 rd – 25 th Mar	13 th – 15 th Apr 27 th – 29 th Apr
11 th – 13 th May 25 th – 27 th May	15 th – 17 th Jun	13 th – 15 th Jul 27 th – 29 th Jul	10 th – 12 th Aug 24 th – 26 th Aug
14 th – 16 th Sep 28 th – 30 th Sep	12 th – 14 th Oct 26 th – 28 th Oct	9 th – 11 th Nov 30 th Nov – 2 nd Dec	7 th – 9 th Dec

MAR1 Introduction to the Safe Operation of Marine & Offshore High Voltage Power Systems (Limited High Voltage Authorisation)

Duration: 3 days

Introduction: This is an intermediate training programme that requires a basic level of electrical knowledge. Upon successful completion of the course, candidates will be able to enter marine and offshore high voltage switch rooms and perform limited switching operations etc. on high voltage equipment. They would be permitted to issue limited safety documents, e.g. Isolation documents, but not to issue permits to work, sanction for test, etc. (The MAR 1 course progresses to the MAR 4/OS4 course, if more advanced training is required.)

Participants: Electrical/non-electrical personnel required to carry out restricted HV switching operations with limited safety document issuing responsibilities.

Aim: To introduce personnel to the basic concept of marine/offshore electrical power systems to enable them to enter substations/switch rooms, carry out restricted switching operations; monitor the performance and condition of the system (including relay operation) in a safe and competent manner. The course is intended to provide knowledge and awareness of limited safety document issuing responsibilities.

Outline Contents

- Safety requirements
- Electrical hazards and precautions
- Arrangement of high voltage substations/switchrooms
- Power generation in “island systems”
- Emergency conditions
- Philosophy of high voltage distribution
- Operation and safety features of switchgear
- Limited operational procedures
- High voltage safety rules
- Introduction to electrical protection
- Treatment of the system neutral
- Practical switching exercise (1)
- Case studies
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

29th – 31st Mar

17th – 19th May

21st – 23rd Jul

9th – 11th Aug

4th – 6th Oct

MAR2 Introduction to the Safe Operation of Marine High Voltage Power Systems in Remote Operated Vehicles (ROVs)

Duration: 1 day

Introduction: This is an intermediate training programme that requires a basic level of electrical knowledge. Upon successful completion of the course, candidates will be able to enter the electrical compartments of ROV systems to carry out service operations. The course will provide candidates with information about the safety procedures required to ensure that the high voltage systems are isolated, proved dead and earthed. (The MAR 2 course progresses to the MAR1 course, if more advanced training is required.)

Participants: Electrical/non electrical personnel required to carry out service and maintenance operations on ROV electrical equipment.

Aim: To introduce personnel to the basic concept of the safe operation of high voltage electrical power systems which are embedded in ROV systems. On successful completion of the course candidates are expected to be able to work safely in the ROV electrical environment.

Outline Contents

- Safety requirements
- Electrical hazards and precautions
- Arrangement of high voltage equipment in ROV systems
- Philosophy of high voltage distribution
- Limited operational procedures relevant to ROV systems
- High voltage safety rules
- Practical system isolation exercise
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

11 th Mar	1 st Apr	6 th May	19 th Jul
20 th Sep	12 th Nov		

MAR4/OS4 Fundamentals of the Safe Operation of Marine/Offshore High Voltage Power Systems

Duration: 5 days

Introduction: This training programme requires a good foundation of electrical knowledge. It is designed to bring candidates up to a "Senior Authorised" level. However, the course does not provide the "authorisation" itself. The course is a marine/ offshore development from our S4 course.

Participants: Marine/offshore personnel with a prior knowledge of the inspection, operation, maintenance, and repair of high voltage systems and who are to be responsible for switching and issue of safety documents (such as electrical permits to work).

Aim: To improve the understanding of HV/LV power systems including statutory regulations, safe operation, protection, maintenance and fault diagnosis on a wide range of marine/offshore power equipment. Also to enable candidates to perform HV switching operations on marine offshore power equipment and to prepare them for HV authorisation in accordance with their companies' safety rules/regulations.

Outline Contents

- UK and other national marine/offshore statutory electrical regulations.
- Electrical hazards and precautions
- Arrangement of high voltage switchrooms.
- Operation and safety features of switchgear.
- Operational Procedures.
- Marine/offshore high voltage safety rules.
- Issue and control of safety documentation
- Safety Lockout Procedure, Key Safes/Multi Hasp locking device (Isoloks).
- Treatment of system neutral point
- Appreciation of fault levels.
- Marine/offshore application of electrical protection.
- Emergency conditions.
- Practical exercises (3-switching/ safety documents/ synchronisation).
- Case studies.
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday "Competence" certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday "Attendance" certificate.

Dates: For courses undertaken at our UK training centre

25 th – 29 th Jan	8 th – 12 th Feb 22 nd – 26 th Feb	8 th – 12 th Mar 22 nd – 26 th Mar	12 th – 16 th Apr
10 th – 14 th May 24 th – 28 th May	21 st – 25 th Jun	12 th – 16 th Jul	2 nd – 6 th August 16 th – 20 th August
20 th – 24 th Sep	11 th – 15 th Oct 25 th – 29 th Oct	22 nd – 26 th Nov	

MAR 5 Principles of the Safe Operation of Marine/Offshore High Voltage Power Systems

Duration: 5 days

Introduction: This is an advanced training programme that requires a good foundation of electrical knowledge and experience of high voltage switching.

Participants: Electrical engineers, electrical officers and contract electrical engineering staff, responsible for the design, construction, commissioning and operation of marine/offshore electrical power systems, and to be responsible for switching and the issue of safety documents.

Aim: This course has been developed to meet requirements of the I.M.C.A. (International Marine Contractors Association) and other organisations, in the safe operation of high voltage systems in marine/offshore applications (HV systems not control systems) This course is a more advanced course than the MAR4 course and includes a wider range of technical aspects with less emphasis on switching operations.

Outline Contents

- Marine/offshore statutory electrical requirements
- Philosophy of high voltage distribution
- Operational and safety features of switchgear
- Operational Procedures
- Marine / offshore high voltage safety rules
- Basic fault calculations
- Marine / offshore application of electrical protection
- Principles of power management systems
- Outline of electrical testing
- Treatment of system neutral point
- Synchronisation
- Electrical maintenance
- Case studies
- Automatic voltage regulation
- Practical exercises (2-switching/ safety documents)
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

12th – 16th Apr

14th – 18th Jun

6th – 10th Sep

15th – 19th Nov

MAR 6 The Control & Management of Offshore & Marine High Voltage Power Systems

Duration: 5 days

Introduction: This course is designed for candidates involved in the management and operation of marine/offshore high voltage power systems requiring an understanding of the principles of power generation and high voltage distribution systems and how to safely control and manage abnormal situations such as power failures and emergencies. The course also introduces candidates to the safe operation of high voltage systems but it does not authorise participants to carry out high voltage switching operations (see MAR4 course).

Participants: Non-electrical personnel responsible for the safe control and management of high voltage power systems in a marine or offshore environment.

Aim: To give participants an understanding of the functional, operational and safety requirements of marine and offshore high voltage systems and the remedial action necessary during system faults. This course is not intended to authorise participants to carry out switching duties (see MAR4 course).

Outline Contents

- Statutory electrical regulations
- Situation / stress management
- Operational and safety features of switchgear
- High voltage safety rules and procedures
- An introduction to electrical protection
- Synchronisation and control of generators
- An outline of DCS and SCADA systems
- An introduction to power management systems
- The operation of power systems during planned and fault situations
- Action to be taken during loss of high voltage control facilities
- Simulated and practical exercises
- Course review

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

15th – 19th Feb

10th – 14th May

13th – 17th Sep

M1 Basic Principles of the Maintenance of Electrical Switchgear

Duration: 5 days

Introduction: This course is intended to provide theoretical and practical instruction on the maintenance and repair of HV/LV switchgear of various types.

Participants: Engineers, supervisors and technicians with a responsibility for the maintenance of HV/LV electrical switchgear

Aim: To provide theoretical and practical instruction on the maintenance and repair of HV/LV switchgear of various types.

Outline Contents

- Statutory regulations and codes of practice
- Operational and safety features of switchgear
- Primary conductors
- Circuit breakers – oil/gas/air/vacuum
- Auxiliary equipment
- Exterior of switchpanels
- Switchroom housekeeping
- Battery units
- Trouble shooting
- Practical maintenance exercises
- Course review

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

22nd – 26th Feb

5th – 9th Jul

20th – 24th Sep

Section 2: Electrical Protection Courses

P1 Protection of Electrical Power Systems

Duration: 5 days

Introduction: This training programme requires a good foundation of electrical knowledge. The course covers industrial electrical protection in depth and involves a number of practical exercises and demonstrations combined with classroom theory. A wide range of protective devices are used during the course including mechanical, electromechanical and microprocessor based relays.

Participants: Electrical/plant engineers, supervisors, technicians, electricians with responsibility for the application, commissioning and/or maintenance of electrical protective equipment used on industrial electrical power systems

Aim: To provide detailed theoretical and practical instruction on HV/LV electrical protective equipment including primary and secondary injection of electronic and electro mechanical devices

Outline Contents

- The role of protection
- Current and voltage transformers
- Fuses and other protective devices
- Methods of achieving discrimination
- Fault calculation
- The calculation of graded time settings for IDMTL relays
- Testing procedures
- Motor protection, feeder protection, transformer protection, generator protection
- Busbar zone protection
- Standard marking of switchgear panel wiring
- Tutorials
- Case studies
- Practical exercises: CT magnetisation tests, primary/secondary injection, bench testing
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate, candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

1 st – 5 th Feb	19 th – 23 rd Apr	24 th – 28 th May	28 th Jun – 2 nd Jul
23 rd – 27 th Aug	11 th – 15 th Oct		

P2 Appreciation of the Protection of Electrical Power Systems

Duration: 2 days

Introduction: This course is intended to give personnel an introductory insight into the protective apparatus that would be fitted to high voltage switchgear connected to feeders, transformers, motors and generators in industrial, commercial and marine installations.

Participants: Electrical/plant engineers, supervisors, technicians, electricians requiring an outline knowledge of the application of electrical protective equipment used on electrical power systems.

Aim: To provide an outline of theoretical and practical instruction on HV/LV electrical protective equipment, so that candidates may understand the function, role and application of various protective devices.

Outline Contents

- The role of protection
- Fuses and other protective devices
- Current and voltage transformers
- Methods of achieving discrimination
- Relay grading
- Motor protection
- Feeder protection
- Transformer protection
- Generator protection
- Busbar zone protection
- Trip circuit supervision requirements
- Tutorial / practical
- Course review

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

15 th – 16 th Feb	29 th – 30 th Mar	4 th – 5 th May	31 st Aug – 1 st Sep
1 st – 2 nd Nov			

Section 3: Testing Courses

T1 Electrical Pressure Testing

Duration: 1 day

Introduction: This course covers the theoretical and practical principles of pressure testing on HV distribution systems, including the different insulating material characteristics as well as the methods used to enable the pressure testing of high voltage equipment, including cables, switchgear, transformers and motors with emphasis placed upon safety requirements and interpretation of test results.

Participants: Authorised electrical engineers/technicians responsible for carrying out high voltage pressure testing or those with a responsibility for supervising personnel who carry out high voltage pressure tests. It is recommended that candidates should be authorised to receive sanction for test documents before taking this course (See S8 Course).

Aim: To cover the theoretical and practical aspects of electrically testing the insulation integrity of power cables, switchgear, transformers, motors etc

Outline Contents

- Safety requirement
- Power cables
- Insulation resistance
- Polarisation index
- Flash testing
- DC pressure tests
- AC pressure tests
- VLF (Very Low Frequency) tests
- Practical testing exercises
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

25 th Jan	29 th Mar	17 th May	1 st Nov
6 th Dec			

T2 Earth Electrode Testing

Duration: 1 day

Introduction: This course covers different types of earth electrode systems used in conjunction with high voltage networks including methods of testing earth electrode systems and subsequent interpretation of tests.

Participants: Electrical engineers/technicians/contractors responsible for the installation, commissioning and testing of earth electrodes used on High Voltage systems.

Aim: To provide theoretical and practical instruction in the testing of earth electrode systems.

Outline Contents

- Purpose of test
- Testing conditions
- Test equipment
- Safety considerations
- Statutory regulations and standards
- Test results
- Remedial work
- Testing procedures
- Course review

Certification: Candidates who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

26th Jan

30th Mar

18th May

2nd Nov

7th Dec

T3 Transformer Testing and Maintenance

Duration: 2 days

Introduction: This course provides technical information about the significance of various tests that are carried out on High Voltage transformers. It also covers practical methods of transformer testing including practical routine tests for post fault and preventive maintenance.

Participants: Electrical engineers/technicians responsible for the installation, commissioning, operation and maintenance of electrical power transformers.

Aim: To provide understanding in the practical, technical and safety aspects of transformer operation, maintenance and testing.

Outline Contents

- Safety requirements
- Transformer design and construction
- Installation/periodic testing
- Transformer oil
- Buchholz protection unit
- Open circuit tests
- Short circuit tests
- Vector group tests
- Temperature devices
- Insulation testing
- Routine maintenance
- Practical exercises
- Course review

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

27th – 28th Jan

31st Mar – 1st Apr

19th – 20th May

3rd – 4th Nov

8th – 9th Dec

T5 Cable Identification / Spiking

Duration: 1 day

Introduction: This course is designed for Authorised electrical personnel responsible for ensuring the safety of personnel working on HV underground electrical power cable systems. The course aims to provide instruction in the practical, technical and safety aspects of identifying underground electrical power cables and their subsequent spiking to ensure the safety of personnel required to work upon these cables.

Note: This is not a cable fault location course.

Participants: Authorised Electrical engineers/technicians responsible for ensuring the safety of personnel working on HV underground electrical power cables.

Aim: To provide instruction in the practical, technical and safety aspects of identifying underground electrical power cables and their subsequent spiking to ensure the safety of personnel required to work upon these cables

Outline Contents

- Safety requirements
- Ground clearance
- Methods of cable identification
- Cable spiking
- Case studies
- Practical exercises
- Course review

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

29 th Jan	1 st Apr	21 st May	5 th Nov
10 th Dec			

Section 4: Low Voltage Courses

This section is predominantly LV however some courses are applicable to HV also.

A1 Electricity at Work Regulations 1989

Duration: 1 day

Introduction: This course explains the requirements and the implications of the Electricity at Work Regulations 1989 for those responsible for electrical safety at work. The duties and responsibilities of everyone affected by the legislation are clearly outlined.

Participants: Personnel with a functional and/or managerial responsibility for the safe use of electricity and electrical equipment.

Aim: To provide delegates with an understanding of the Electricity at Work Regulations 1989 and the application of the regulations throughout industry, commercial premises, shops, offices, schools, hospitals etc.

Outline Contents

- Hazards & Effects of Electricity.
- The Purpose & Back ground of the Regulations.
- Scope of the Regulations.
- Employers, Employees & Contractors Responsibilities.
- Review of Regulations.
- Legal Implications of non Compliance.
- Case Studies.
- Course Review.

Certification: Candidates, who successfully complete the theoretical competence assessment, will receive a Faraday “Competence” certificate. Those who fail or do not wish to undertake the competence assessment will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

22 nd Feb	22 nd Mar	4 th May	18 th Jun
1 st Jul	17 th Sep	20 th Oct	

L1 Live Testing on Systems up to 1000 Volts AC

Duration: 3 days

Introduction: This course is designed to provide best practices for safe working methods for those who need to perform live testing on various electrical equipment & systems. Instruction will be provided to personnel regarding the need and justification for performing tasks or faultfinding on or near live LV conductors, in accordance with statutory regulations.

Participants: Electrical engineers, electrical technicians, electricians and multi-skilled technicians required to carry out fault finding on or near live LV conductors.

Aim: To identify potential hazards, determine safe working procedures and carry out fault finding to avoid danger from such work. The course is not designed to cover any live work for maintenance, repair or modification purposes.

Outline Contents

- Hazards & Effects of Electricity.
- Safe Electrical Isolations.
- Electricity at Work Regulations 1989.
- The Necessity for Live Testing.
- Fault Energy.
- Safe use of Electrical Test Equipment.
- Risk Assessments.
- Fixed Wiring Colour Change.
- Case Studies.
- Construction Installation & Maintenance of Electrical Equipment.
- Practical Exercises.
- Course Review.

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

18 th – 20 th Jan	15 th – 17 th Mar	7 th – 9 th Jun	31 st Aug – 2 nd Sep
8 th – 10 th Nov	6 th – 8 th Dec		

L2 Live Testing on AC & DC Systems up to 1000V AC / 1500V DC

Duration: 3 days

Introduction: This course is designed to provide best practices for safe working methods for those who need to perform live testing on various electrical equipment & systems. Instruction will be provided to personnel regarding the need and justification for performing tasks or faultfinding on or near live LV conductors, in accordance with statutory regulations. Due to the inclusion of DC modules there will be less exposure to AC equipment, which is covered in more detail within the L1 course.

Participants: Electrical engineers, electrical technicians, electricians and multi-skilled personnel required to carry out fault finding on or near live LV conductors.

Aim: To identify potential hazards, determine safe working procedures and carry out fault finding so as to avoid danger whilst undertaking the work. The course is not designed to cover any live work for maintenance, repair or modification purposes.

Outline Contents

- Hazards & Effects of AC & DC Power.
- Safe Electrical Isolations.
- Electricity at Work Regulations 1989.
- DC Power Sources.
- Safe Handling & Maintenance of Batteries.
- Statutory Regulations.
- The Necessity for Live Testing.
- Fault Energy.
- Safe use of Electrical Test Equipment.
- Risk Assessments.
- Fixed Wiring Colour Change.
- Case Studies.
- Construction, Installation & Maintenance of Electrical Equipment.
- Practical Exercises.
- Course Review.

Certification: Candidates, who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

15th – 17th Feb

17th – 19th May

16th – 18th Aug

27th – 29th Sep

24th – 26th Nov

S11 **Low Voltage Authorised Person Training** (Formerly known as The Safe Operation of Low Voltage High Power Systems)

Duration: 5 days

Introduction: This is an advanced training course aimed at experienced electricians/engineers who are required to carry out switching operations for the safe isolation and de-isolation of low voltage power systems up to 1000 volts AC. Candidates will be introduced to safe operating procedures including lockout/tagout, risk assessment and the issue and control of safety documentation. The course includes several practical sessions on a wide range of industrial power installations as well as the preparation of Task Risk Assessments.

Participants: This course is intended for personnel involved with the operation of low voltage installations (up to 1000 volts AC) for the purpose of commissioning, testing, inspection, maintenance or repair.

Aim: This course is intended to enhance candidates knowledge of statutory regulations, codes of practice, safety procedures and technical aspects of low voltage power systems.

Outline Contents

- Electricity at Work Regulations
- Electrical hazards and precautions
- Outline of the design, construction, installation and maintenance of low voltage equipment
- Appreciation of earthing systems, power equipment and safety earths
- Outline of HV and LV installations (including incoming transformers)
- Electrical isolation and safety procedures
- Safety documentation (switching programme – lockout/tagout)
- Electrical permit to work
- Safe testing of low voltage electrical equipment and installations
- Risk assessment
- Application of low voltage protection
- Case studies
- Practical exercises

Certification: Candidates who successfully complete the theoretical and practical competence assessments will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

25 th – 29 th Jan	8 th – 12 th Mar	19 th – 23 rd Apr	10 th – 14 th May
21 st – 25 th Jun	2 nd – 6 th Aug	4 th – 8 th Oct	

**C&G 2377-001 Management of Electrical Equipment Maintenance
(Portable Appliance Testing, City & Guilds 2377-001)**

The Faraday Centre is a MoD ELCAS Approved Training Provider for this course

Duration: 1 day including City & Guilds examination

Introduction: The C&G2377-001 is the first unit to City & Guilds 2377 Portable Appliance Testing qualification. The course addresses the setting up and management of the systems involved for the in-service inspection and testing of electrical equipment. The unit is aimed at those who will manage and administer the system.

The course includes a FREE copy of the “IEE Code of Practice for In-service Inspection and Testing of Electrical Equipment” (worth £35).

Note: If the same candidate wishes to book this course as well as City & Guilds 2377-002 (page 35), only one free copy of the above book will be given out. However, the candidate may receive a discount. Please ask a member of staff.

Participants: Electrical and non-electrical personnel with a responsibility for the safe use of electrical equipment (portable appliances).

Aim: To provide information and familiarise candidates with the management of electrical equipment maintenance based on the IEE Code of Practice for in-service inspection and testing of electrical equipment.

Outline Contents

- Management systems
- The Law and scope of the legislation
- Electrical equipment classification
- In-service inspection and testing
- Documentation and labelling
- Training for competence
- Instruments
- City and Guilds 2377-001 examination.

Examination: The online multiple choice examination comprises 45 questions (1.5 hour) and must be booked in advance either at the time of course booking or at least 7 days prior to course commencement.

Certification: Candidates who successfully complete the course and City & Guilds examination will receive a City & Guilds certificate. Those who fail the examination will receive a Faraday “Attendance” certificate only.

Dates: For courses undertaken at our UK training centre

13 th Jan	4 th Mar	20 th May	26 th Jul
6 th Sep	4 th Oct	1 st Nov	13 th Dec

**C&G
2377-002**

**Inspection & Testing of Electrical Equipment (Portable Appliances
Testing) City & Guilds 2377 –002**

The Faraday Centre is an MoD ELCAS Approved Training Provider for this course

Duration: 1 day including City & Guilds examination

Introduction: The C&G2377-002 is the second unit to City & Guilds 2377 Portable Appliance Testing qualification. During the course, a number of practical exercises are undertaken using a range of portable appliance testing equipment. This course is aimed at individuals responsible for the undertaking of practical inspection and testing of electrical equipment. The course includes a FREE copy of the “IEE Code of Practice for In-service Inspection and Testing of Electrical Equipment” (worth £35).

Note: If the same candidate wishes to book this course as well as City & Guilds 2377-001 (page 34), only one free copy of the above book will be given out. However, the candidate may receive a discount. Please ask a member of staff.

Participants: Electrical and non-electrical personnel with a responsibility for the safe use of electrical equipment (portable appliances).

Aim: To give delegates theoretical and practical experience in the implementation of a formal inspection and testing regime for electrical equipment (portable appliances)

Outline Contents

- Hazards of electricity
- Classification of appliances
- Dangers associated with the use of various types of portable & fixed electrical appliances.
- Legal requirements and IEE Code of Practice
- Approved inspection and testing procedures
- Portable appliance testers
- Recording of results and maintenance documents
- Practical exercises and Course review
- City and Guilds 2377-002 examination.

Examination: The online multiple choice examination comprises 30 questions (1 hour) and must be booked in advance either at the time of course booking or at least 7 days prior to course commencement.

Certification: Candidates who successfully complete the course and City & Guilds examination will receive a City & Guilds certificate. Those who fail the examination will receive a Faraday “Attendance” certificate only.

Dates: For courses undertaken at our UK training centre

14 th Jan	5 th Mar	29 th Apr	21 st May
27 th Jul	7 th Sep	5 th Oct	2 nd Nov
14 th Dec			

**C&G2382-10 Certificate in the Requirements of Electrical Installations
BS7671:2008: (IEE 17th Edition Wiring Regulations)**

The Faraday Centre is an MoD ELCAS Approved Training Provider for this course

Duration: 3 days including City & Guilds examination

Introduction: The C&G2382-10 course is designed around the required syllabus for the City & Guilds 2382-10 exam and qualification. It is an industry standard qualification for the electrical trade. This course is aimed at covering all of the alterations with the new BS 7672 (2008) Regulations for Electrical Installations.

It is a requirement of the course that candidates provide their own copy of the BS7671 (2008) IEE 17th Edition Wiring Regulations and IEE On-site Guide.

Participants: All electrical personnel with a responsibility for the safe installation of electrical apparatus operating up to 1000 volts AC in industrial/commercial & domestic premises.

Aim: To familiarise participants with the layout, content and application of the 17th Edition Wiring regulations

Outline Contents

- Background to BS7671 (2008).
- Legal status and association with statutory documents
- Layout and numbering system
- Scope, object and fundamental requirements for safety
- Assessment of general characteristics
- Protection for safety
- Selection and erection of equipment
- Special installation or locations
- Inspection and testing
- Course review
- City and Guilds 2382-10 examination.

Examination: The online multiple choice examination comprises 60 questions (2 hours) and this must be booked in advance either at the time of course booking or at least 7 days prior to course commencement.

Certification: Candidates who successfully complete the course and City & Guilds examination will receive a City & Guilds certificate. Those who fail the examination will receive a Faraday “Attendance” certificate only.

Dates: For courses undertaken at our UK training centre

25 th – 27 th Jan	15 th – 17 th Feb	15 th – 17 th Mar	24 th – 26 th May
21 st – 23 rd Jun	14 th – 16 th Jul	23 rd – 25 th Aug	27 th – 29 th Sep
25 th – 27 th Oct	15 th – 17 th Nov	6 th – 8 th Dec	

C&G2382-20 Certificate in the Requirements of Electrical Installations BS7671:2008: (IEE 17th Edition Wiring Regulations).

The Faraday Centre is an MoD ELCAS Approved Training Provider for this course

Duration: 1 day including City & Guilds examination

Introduction: This course is the update qualification to the IEE 17th Edition for those personnel who already have IEE 16th Edition qualification, known as City & Guilds 2381. The course covers topics such as protection for safety, selection and erection of equipment, and inspection and testing to meet the standards of the IEE Wiring Regulations BS7671: June 2008.

It is a requirement of the course that candidates provide their own copy of the BS7671 (2008) IEE 17th Edition Wiring Regulations and IEE On-site Guide.

Participants: All electrical personnel with a responsibility for the safe installation of electrical apparatus operating up to 1000 volts in industrial / commercial and domestic premises.

Entry Requirements: It is required that candidates must have achieved one or more of the following qualifications:

- City & Guilds 2381, IEE 16th Edition (June 2001 or later)
- City & Guilds 2330 Part 07
- City & Guilds 2330 Part 08
- City & Guilds 23601 Part 2 (certified from 1st January 2004 onwards)

Proof of certification will be required at the time of booking the course and photographic identification at the time of undertaking the course and examination.

Aim: To familiarise participants with the layout, content and application of the recent changes to BS 7671 (2001) the wiring regulations.

Outline Contents

- Background to the changes within BS7671 (2008).
- Legal status and association with statutory documents
- Layout and numbering system
- Scope, object and fundamental requirements for safety
- Assessment of general characteristics
- Protection for safety; Selection and erection of equipment
- Special installation or locations
- Inspection and testing
- Course review
- City and Guilds 2382-20 examination.

Examination: The online multiple choice examination comprises 30 questions (1 hour) this must be booked in advance at the time of course booking.

Certification: Candidates who successfully complete the course and City & Guilds examination will receive a City & Guilds certificate and a Faraday “Attendance” certificate. Those who fail the examination will receive a Faraday “Attendance” certificate only.

Dates: For courses undertaken at our UK training centre

21 st Jan	8 th Feb	18 th Mar	1 st Apr
13 th May	17 th Jun	5 th Jul	5 th Aug
16 th Sep	14 th Oct	18 th Nov	9 th Dec

LVTI Practical Introduction to the Safe and Correct Use of Low Voltage Test Instruments.

Duration: 2 Days

Introduction: This course is designed specifically for individuals with no previous experience in Low Voltage testing. It focuses on the practical (Hands on) element of testing and is predominately workshop rather than classroom based. This course should be undertaken as a pre-cursor to the City & Guilds 2391 – 10.

Participants: Electrical personnel who require practical (Hands on) experience of testing and the safe and correct use of test instruments prior to undertaking the City & Guilds 2391 – 10 course.

Aim: To introduce personnel to the fundamental concepts of testing Low Voltage installations, enabling them to familiarise themselves with Low Voltage test equipment and the associated protocols required to correctly carry out testing of Low Voltage installations.

Outline Contents:

- Electrical Safety
- Legal requirements
- Safety isolations
- Inspection techniques and procedures
- Use of test instruments
- Dead testing
- Live testing
- Practical Exercises
- Certification

Examination: This course does not carry a formal examination.

Certification: Candidates who successfully complete the course will receive a Faraday ‘Attendance’ certificate.

Dates: For courses undertaken at our UK training centre

25th – 26th Jan

1st – 2nd Mar

17th – 18th May

12th – 13th Jul

2nd – 3rd Aug

**C&G2391-10 Inspection, Testing & Certification of Electrical Installations
BS7671:2008: City & Guilds 2391-10**

The Faraday Centre is an MoD ELCAS Approved Training Provider for this course

Duration 4 days including practical assessments & City & Guilds theoretical examination

Introduction: This course is designed around the required syllabus for the City & Guilds 2391-10 exam and qualification. It is an advanced qualification and is becoming an industry standard for electricians and other contractors who are required to test and inspect their own, or others electrical installations.

Candidates should provide their own copy of the BS7671 IEE 17th Edition Wiring Regulations, the IEE On-site Guide and Guidance Notes 3.

Candidates may find it beneficial to attend our LVTI course - Practical Introduction to the Safe and Correct Use of Low Voltage Test Instruments as a pre-cursor to this course. (*see Page 38*)

Participants: This course is intended for experienced personnel working in the electrical industry. Although City & Guilds does not state formal candidate entry requirements, the course is not intended for non-qualified electricians or those who do not have experience in inspection, testing and certifying electrical installations operating up to 1000 volts. Participants should possess relevant experience and City & Guilds 2382 or equivalent qualification e.g Level 3 Electro-technical Certificate. Proof of certification will be required at the time of the course.

Aim: To give participants theoretical and practical experience of the Inspection, Testing and Certification requirements of BS7671.

Outline Contents

- The Purpose and frequency of inspection and testing
- The main inspection requirements
- The requirements and sequence of tests
- Test apparatus
- Understanding and completion of certification documents
- Practical exercises
- City and Guilds 2391-10 examination.

Examination: City & Guilds 2391-10 written exam (2.5 hours) must be booked in advance. Late registration entry up to 3 weeks before the exam week is subject to additional charges. City & Guilds will not accept registration 14 calendar days prior to the exam date. The exam is taken on dates and times specified by City & Guilds, usually commencing at 6:30 p.m. The practical assessments are scheduled to take place on either morning or afternoon time slots on the last day of the course or Friday immediately following the course.

Certification: Candidates who successfully complete the course and City & Guilds examination will receive a City & Guilds certificate and a Faraday “Attendance” certificate. Those who fail the examination will receive a Faraday “Attendance” certificate only.

continued on page 40

C&G2391-10 Inspection, Testing & Certification of Electrical Installations
BS7671:2008: City & Guilds 2391-10

Examination dates: The City & Guilds written examination (2.5 hours) will start on 6.30 p.m. on the following dates and be undertaken at our UK training centre.

11 th Feb	11 th Mar	3 rd Jun	22 nd Jul
12 th Aug			

It is anticipated that City & Guilds will schedule additional examination dates later in the year.

Course Dates: The course dates for this course have been scheduled to allow two options:

Option 1: The full 4-day course is scheduled to run in four consecutive dates from 9.00 a.m. to 4.30 p.m. daily. The City & Guilds 2391 written examination will take place on the evening of the last day of the course on the dates specified above.

Course dates for the above option undertaken at our UK training centre are:

8 th – 11 th Feb	8 th – 11 th Mar	24 th – 27 th May	19 th – 22 nd Jul
9 th – 12 th Aug			

Option 2: We have also scheduled to run the same course on a part time basis, one day per week and the course will be completed prior to the City & Guilds written examination date(s). The course will start at 9.00 a.m. to 4.30 p.m. each day. Candidates will then be required to undertake the City & Guilds written examination on the dates and times mentioned above.

Course dates for the above option undertaken at our UK training centre are:

Course	Day 1	Day 2	Day 3	Day 4	Exam
First part time course: course code 2391 PT01	Friday 15 th Jan	Friday 22 nd Jan	Friday 29 th Jan	Friday 5 th Feb	Thursday 11 th Feb
Second part time course: course code 2391 PT02	Friday 12 th Feb	Friday 19 th Feb	Friday 26 th Feb	Friday 5 th Mar	Thursday 11 th Mar
Third part time course: course code 2391 PT03	Friday 7 th May	Friday 14 th May	Friday 21 st May	Friday 28 th May	Thursday 3 rd Jun
Fourth part time course: course code 2391 PT04	Friday 18 th Jun	Friday 25 th Jun	Friday 2 nd Jul	Friday 9 th Jul	Thursday 22 nd Jul
Fifth part time course: course code 2391 PT05	Friday 16 th Jul	Friday 23 rd Jul	Friday 30 th Jul	Friday 6 th Aug	Thursday 12 th Aug

The Faraday Centre Ltd – Course Prospectus 2010

**Accredited Electrical Inspectors
Fairground/Amusement Devices**

About A.D.I.P.S.

ADIPS (Amusement Device Inspection Procedures Scheme) is the fairground and amusement park industry's self regulated safety inspection scheme which registers competent ride inspectors and the rides they inspect.

Qualified and competent groups or individuals can register with the scheme to be able to inspect amusement devices in various engineering disciplines, for pre use inspection and in-service annual inspection, on behalf of the members of the industry trade associations.

The purpose of the scheme is to promote and improve fairground and amusement park safety through rules and procedures relating to the annual inspection of the amusement devices. It is supported by industry associations who require that their members use ADIPS.

These industry associations make up the policy setting body for the procedures scheme which is the Amusement Device Safety Council (ADSC).

ADIPS is also available to any operator of amusement devices as it demonstrates "BEST PRACTICE" and their compliance with the Health and Safety at Work (etc) Act."

For additional information about ADIPS, please visit www.adips.co.uk

The Faraday Centre Ltd have developed a course exclusively for ADIPS electrical inspectors conducting electrical inspection and testing on amusement devices. The training programme takes into account the increased health and safety standards required for electrical inspectors which is indicative of the importance of health and safety within the amusement industry.

The Faraday Centre Ltd is the exclusive training provider of this course to ADIPS. For further details, please refer to page **42** or contact:

The Faraday Centre, telephone 01642 467236

ADIPS, telephone 0191 516 6381

continued on page 42

ADIPS Amusement Device Inspection Procedures Scheme (A.D.I.P.S.) Inspector Training and Assessment

Duration: 3 days

Introduction: This course is designed specifically to ascertain the suitability of electrical personnel responsible for the electrical inspection and testing of amusement devices, associated with fairgrounds, amusement parks, and theme parks.

Participants: Electrical personnel who are to be responsible for the inspection and testing of amusement devices associated with fairgrounds, arcades etc. Participants **must** possess City & Guilds 2382 and 2391 qualifications and be able to provide proof of certification along with photographic identification.

Aim: To provide participants with theoretical and practical experience of the electrical inspection and testing of amusement devices and to identify their competence and suitability to become ADIPS inspectors.

Outline Contents

- Legal aspects – Electricity at work regulations 1989
- Electrical hazards and precautions
- Protective devices
- Fixed and mobile installations
- Fault Levels
- DC Ripple – Generation/Rectification
- Safety requirements for inspection and testing
- Introduction to ADIPS test forms
- Cable sizing
- Connections/Plug sockets/Cable types/enclosures and terminations
- Practical Exercises.
- Course Review.

Certification: Participants, who successfully complete the theoretical and practical competence assessments, will receive a Faraday Competence certificate. NB: Successful completion of the course and competence assessments will enable participants to register with ADIPS as an inspector.

Dates: For courses undertaken at our UK training centre

15th – 17th Feb

4th – 6th May

20th – 22nd Sep

HAZ 1 Safe Use of Electrical Equipment in Hazardous Areas

Duration: 3 days

Introduction: This course is designed for personnel working within hazardous area environments. The course provides a theoretical overview of the hazards associated with installing, operating and maintaining electrical equipment within potentially explosive areas. This is not a COMPEX course however the same theories, details and standards are covered.

Participants: All personnel in any position within a company working on a plant / installation or within any environment which contains hazardous gases / vapours / dusts that are potentially explosive. This particularly applies to personnel involved with operating or working with any electrical plant / equipment or machinery in the oil & gas industry.

Aim: To provide personnel working within potentially explosive environments with sufficient knowledge, and detail to ensure that they perform any task relating to the installation, operation & maintenance of electrical equipment safety.

Outline Contents

- Definitions of Hazardous Areas
- Protection Concepts
- Hazardous Area Classification
- Gas Groups
- Flash Point
- Ignition Temperatures
- Explosive Limits LEL / UEL
- Zone Definitions 0 1 & 2 Safe Areas
- Temperature Classification
- Equipment Selection
- Labelling & Certification to CENELEC Standards
- ATEX Directives
- Duties of the installer, Manufacturer & Operator
- Inspections & Maintenance of Electrical Equipment
- Intrinsically Safe (IS) Equipment & Systems

Certification: Candidates who successfully complete the theoretical competence assessment will receive a Faraday “Competence” certificate. Those who fail or do not wish to undertake the competence assessment will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

1 st – 3 rd Feb	22 nd – 24 th Mar	6 th – 8 th Apr	4 th – 6 th May
12 th – 14 th Jul	31 st Aug – 2 nd Sep	25 th – 27 th Oct	

E1 Basic Electricity

Duration: 5 days

Introduction: This course is designed to provide the fundamental aspects of electricity and electrical equipment and the associated safety and regulations relating to working with electricity.

Participants: Personnel entering into electrical engineering and also any non-electrical personnel requiring basic electrical knowledge. This may include safety, operations or trade personnel requiring a basic electrical understanding.

Aim: The course aims to provide personnel with an understanding of the basic concepts of electrical engineering and become familiar with typical electrical equipment, systems and procedures. This is to permit all personnel to work and operate electrical equipment in a safe and competent manor.

- Hazards & Effects of Electricity.
- Safe Systems of Work.
- Basic Electrical Principles.
- Harmonised Cable Conductor Colours & Markings.
- Portable Appliances / Power Tools.
- Cables & Support Systems.
- Circuit Protection Devices.
- Earthing Systems & Bonding.
- Electrical Drawings & Symbols.
- Electrical Connections & Terminations.
- Motors & Control Circuits.
- Faultfinding & Troubleshooting.
- Industrial Lighting Types, Purposes and Maintenance.
- Lighting & Power Circuit Theory.
- Safe Use of Test Equipment.
- Testing of Electrical installations & Equipment.
- Course Review.

Certification: Candidates who successfully complete the theoretical and practical competence assessments, will receive a Faraday “Competence” certificate. Candidates who fail or do not wish to undertake the competence assessments will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

22 nd – 26 th Feb	26 th – 30 th Apr	9 th – 13 th Aug	18 th – 22 nd Oct
15 th – 19 th Nov	13 th – 17 th Dec		

E2 Electrical Safety Awareness

Duration: 3 days

Introduction: This course is designed to provide guidance on working safely on low voltage electrical equipment & systems (up to 1000V AC 1500V DC) located within industrial environments. The course will assist employees and companies to reduce the risk of personal injury, due to electrocution and arc flash, also to help prevent damage to assets due to operator error.

Participants: Electrical and non electrical personnel requiring electrical safety awareness training to enable them to become aware of the hazards associated with the installation, maintenance and operation of Low Voltage electrical equipment.

Aim: To raise the level of safety awareness for all personnel working with electrical equipment and for the candidates to comprehend the safety rules, regulations & guidelines related to current legislation.

- Hazards & Effects of Electricity.
- Arc Flash.
- Selection & Use of Suitable PPE.
- Electricity at Work Regulations 1989.
- Permit to Work (PTW).
- Electrical Documentation.
- Safe Electrical Isolations.
- Risk Assessments.
- Harmonised Cable Conductor Colours & Markings.
- Earthing & Bonding.
- Portable Appliances.
- Fault Levels & Fault Energy.
- Electrical Equipment in Hazardous Areas.
- Maintenance of Electrical Equipment.
- Safe Use of Test Equipment.
- Course Review.

Certification: Candidates who successfully complete the theoretical competence assessment will receive a Faraday “Competence” certificate. Those who fail or do not wish to undertake the competence assessment will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

12 th – 14 th Apr	17 th – 19 th May	14 th – 16 th Jun	7 th – 9 th Jul
20 th – 22 nd Sep	8 th – 10 th Nov		

E4 Electrical for Non-Electrical Personnel

Duration: 3 days

Introduction: This (low voltage) course is designed to provide personnel working within industrial/commercial environments electrical knowledge to work safely & effectively. The course is ideal for personnel working within multi craft environments where skills enhancement and development are required. This course is not designed for domestic installers.

Participants: This course is suitable for non-electrical personnel (mechanical, instrumentation, civil, process, operations & production) to provide an understanding of essential electrical safety and typical industrial electrical equipment, systems and procedures. To include installation, testing, inspection, protection and maintenance of electrical circuits, control systems and equipment.

Aim: To introduce non-electrical personnel to electrical equipment and build confidence within individuals working within industrial/commercial environments and to develop existing knowledge and skills.

- Hazards & Effects of Electricity
- Safe systems of work
- Harmonised Cable Conductor Colours & Markings
- Circuit Protection Devices
- Understanding electrical drawings & symbols
- Cable types & glanding
- Industrial Lighting Types, Purposes and Maintenance
- Motors/motor circuits & associated theory
- Motors & Control Centres (MCC's)
- Testing & configuration of motors
- Faultfinding on electrical circuits
- Safe use of test equipment
- Testing of electrical installations
- Course Review

Certification: Candidates who successfully complete the theoretical competence assessment will receive a Faraday “Competence” certificate. Those who fail or do not wish to undertake the competence assessment will receive a Faraday “Attendance” certificate.

Dates: For courses undertaken at our UK training centre

22nd – 24th Mar

1st – 3rd Jun

8th – 10th Sep

Section 5: Customised Courses

In addition to our standard scheduled programmes, customised courses can be designed to clients' specific requirements and duration. Whether a single day training or a full staff development programme over several months, the Faraday Centre's extensive experience can help to achieve clients' training objectives.

Course content and duration can be designed to suit clients' needs:

- Tailor the content and duration of our existing course(s).
- Combine contents of existing scheduled courses.
- Design hands-on practical training to suit clients' environment.
- Develop new training solutions to client specifications.

Training programme can be delivered at our training facilities in Middlesbrough UK, Limassol Cyprus and, where practicable, on-site at clients' premises in the UK and overseas. For further information, please contact the Faraday Centre to discuss your specific training requirements.

Section 6: High Voltage Safety Rules/Documents Audit & Development

The Faraday Centre offers consultancy service in auditing and developing high voltage safety rules/documents and operational procedures designed specifically to meet client's requirements, complying with

- Electricity at Work Regulations 1989
- Management of Health & Safety at Work Regulations 1999
- Health & Safety at Work Act 1974

It covers the selection, use, care and maintenance of 3-phase electrical switchgear up to 33kV AC (oil, air, SF6, vacuum). The high voltage safety rules/documents will include:

- Operation of electrical supply systems
- Access to high voltage switchroom
- Operation of switches and isolators
- Record Keeping
- Safe switchgear maintenance
- Safety lockout procedure
- Isolation of transformers
- Earthing
- Permit to Work, switching programme, sanction for test, limitation of access
- Danger / caution notices
- Commissioning and testing of switchgear
- Electric shock treatment

For further information, please contact the Faraday Centre to discuss your specific requirements.