JSP 375 VOLUME 3
CHAPTER 8

TUITION, TRAINING AND SITE FAMILIARITY

Amendments

Amendments	Page No	Date	Inserted by
Main Contents - new sections added	iii	10 Aug 09	P D Meakin
Course attendees - now referred to as candidates throughout this chapter.		10 Aug 09	P D Meakin
2.3.1 - More detail added	2	10 Aug 09	P D Meakin
4. MOD Training Specifications - added	6	10 Aug 09	P D Meakin
4. Introduction - added	6	10 Aug 09	P D Meakin
4. Contents - added	6	10 Aug 09	P D Meakin
4.1 - General requirements - added	7	10 Aug 09	P D Meakin
4.2 - Training provider requirements - added	10	10 Aug 09	P D Meakin
4.3 - Training Provider course approval procedure - added	16	10 Aug 09	P D Meakin
4.4 - Awareness course.- added	29	10 Aug 09	P D Meakin
4.5 - AP Electrical Courses - added	47	10 Aug 09	P D Meakin
4.6 - AP Mechanical course - added	97	10 Aug 09	P D Meakin
4.7 - AP Petroleum course - added	99	10 Aug 09	P D Meakin
4.8 - AP Confined spaces course - added	101	10 Aug 09	P D Meakin
4.9 - AP Working at height course - added	103	10 Aug 09	P D Meakin
4.10 - Authorising Engineer course - added	120	10 Aug 09	P D Meakin
Annexe E - deleted		10 Aug 09	P D Meakin

Contents

1. Introduction

1.1 In the discharge of its duty of care, the Ministry of Defence (MOD), through Defence Estates (DE), has to ensure, as far as is practicable, that all personnel involved in activities having significant risk, be they employed directly or by contractors, are fully aware of, and have experience in, its safe systems of work, permit systems and procedures. JSP 375 Volume 3 Chapter 8 (hereafter referred to as "this Chapter") identifies the tuition, training, knowledge and experience required by prospective:

a) Principal Authorising Authorities (PAA)
b) Senior Authorising Authorities (SAA)
c) Deputy Senior Authorising Authority (DSAA)
d) Authorising Engineers (AE)
e) Authorised Persons (AP)
f) Skilled Persons (SKP)
g) Persons in Charge (PIC)

to demonstrate that the required competence has been achieved and is being maintained. Unless specified in this chapter, definitions, roles, duties, suitability criteria and appointment processes common to all specialisms are contained in JSP 375 Vol 3 ch 2.

1.2 The activities identified by MOD as having significant risk are:

a) Electricity (HV, LV, Hazardous Areas and Airfield Systems)

b) Mechanical Systems (Boilers and Pressure Systems, Natural Gas and LPG Systems, Medical Gas Pipeline Systems and Dental Air and Vacuum Systems)

c) Petroleum

d) Confined Spaces

e) Working at Height (Restricted High Places)

1.3 Details of DE approved training providers are periodically notified via Ministry of Defence Instructions & Notices (DIN) and/or Defence Estates Policy Instruction (PI).

2. Training Requirements

2.1 Background and Awareness Training for the MOD Safe System of Work Practitioners

2.1.1 Prior to embarking upon training specific to other chapters of JSP 375 Vol. 3 all prospective AEs or APs are to undertake Background and Awareness Training that will introduce them to the MOD, DE and the ethos and structure supporting JSP 375 Vol. 3. This will introduce prospective AEs and APs to such topics as behavioural interviewing, Risk Assessment (RA) and auditing. Full details of the awareness requirements in the form of a specification are set out in section 4.4.

2.1.2 The Background and Awareness Training is available as a course provided by a number of the MOD approved providers or it can be undertaken by individual companies. DE may attend any training sessions to verify compliance with the standard set out in section 4.4.

2.2 DE Principal Authorising Authority, Senior Authorising Authority and Deputy Senior Authorising Authority Training

2.2.1 PAA, SAAs and DSAAs are to maintain their Training Plans as part of their annual reporting and development arrangements. Prospective SAAs and DSAAs are to have completed successfully the following training which is in addition to any technical training/Continuing Professional Development (CPD):

a) MOD fire awareness training (e-learning)
b) MOD Selection Interviewing
c) Equality & Diversity training (e-learning)
d) Appropriate Health & Safety Training course certified/approved by an appropriate body (for guidance contact DE Chief Health & Safety Advisor)
e) International Register of Certified Auditors (IRCA) Approved Auditor training

This training is to be periodically refreshed.

2.2.2 SAAs/DSAAs are to periodically review all the MOD approved AE/AP training courses within their area to ensure:

a) Quality and conformity of the training to the relevant specifications within this Chapter
b) Courses are aligned with the relevant procedures within the other Chapters of JSP 375 Vol 3.

2.2.3 This process will ensure that SAAs and DSAAs are aware of, and have up to date detailed knowledge of, the AE/AP approved training courses in their area.

2.3 Authorising Engineer/Authorised Person Training Process

2.3.1 This chapter expands the process described in JSP 375 Volume 3 Chapter 2 that a prospective AE or AP is required to follow to obtain the necessary competence for appointment within the MOD safe systems of work. The process identifies a need for skills training as well as procedural, equipment, systems and site familiarity. Those responsible for certification and appointment of AEs and APs are to provide support and direction throughout the process to ensure the required competence level is achieved prior to certification. A flow diagram for the process is presented in Annexe A and is to be read in conjunction with JSP 375 Vol. 3 Chap. 2 Figures 2 or 3 as appropriate.

2.3.2 The Co-ordinating Authorising Engineer (CAE) /AE as appropriate is to complete the pre-course competence form detailed in Annexe C. This form provides an indication to the training provider of the background and knowledge of the candidate prior to attendance on a MOD approved training

course. This form is to be completed and signed by both the candidate and the CAE/AE. It should be handed to the training provider on the first day of the course. Failure to provide the form will result in the candidate being prevented from taking the final assessment examination and hence achieving a pass.

2.3.3 Each stage of the flow diagram in Annexe A, page 122, has been clarified below:

a) Suitability Assessment – candidates for AE/AP duties are to be proposed by the Maintenance Management Organisation (MMO) to the CAE/AE, who will then carry out a suitability assessment to determine the candidates' current level of competence. At this stage the CAE/AE is to develop and agree a training plan and a programme for equipment, systems and site familiarisation. The candidate is to be issued with a personal Logbook that will contain the Training Plan and familiarisation programme.

b) Background and Awareness Training – Background and Awareness Training is a pre-requisite to the MOD approved Authorised Person training courses. It is to be undertaken by the candidate and shall supplement and support skills training and familiarisation.

c) Skills Training – as part of the suitability assessment, the CAE/AE is to identify the development needs of the candidate and use this as the basis for the training plan. This is to include any specific technical training required to gain competency and support eventual appointment.

d) MOD Approved Courses – candidate is to attend MOD approved training courses as required by JSP 375 Volume 3 for their specific specialism.

e) Familiarisation Training – this is to begin after the suitability assessment, and is to include familiarisation and understanding of the sites, their installations, systems equipment and components for which the candidate is to be appointed. Training and experience shall follow the requirements of the training plan and familiarisation programme issued at the suitability assessment. Familiarisation is to be supported by the existing experienced appointed AEs/APs and monitored by the CAE/AE. The candidate's personal Logbook is to be updated with all relevant training and site based experience undertaken.

f) Assessment – prior to assessment the candidate is to confirm that all required items on the training plan have been satisfactorily completed - successfully passing all relevant training courses. The CAE/AE is to assess the candidate to ensure the required level of competence has been achieved. Achievement means:

i. For an AP – The AE can propose the prospective AP for appointment or if he has the authority, appoint the AP.
ii. For an AE – The CAE can propose the prospective AE to the relevant SAA for assessment.

g) Site Mentoring and Further Skills Training – where the candidate does not meet the required competency level, the CAE/AE responsible is to identify those areas requiring development and is to record these on the training plan.

h) Re-Assessment – following satisfactory completion of the further development the CAE/AE responsible is to undertake a further assessment interview of the candidate.

2.4 Authorising Engineer Training

2.4.1 The initial suitability assessment by the CAE is to set a training plan which is to be endorsed by the SAA. This will include the training and mentoring of the prospective AE identified below:

a) MOD approved training as Annexe D page 125.
b) Appropriate Health & Safety Training course certified/approved by an appropriate body as deemed necessary by the CAE (for guidance contact DE Chief Health & Safety Advisor)
c) Company Fire training as deemed necessary by the CAE
d) First Aid training as deemed necessary by the CAE
e) International Register of Certified Auditors (IRCA) Approved Auditor training
f) Equality & Diversity training
g) A recognised Behavioural Interviewing course
h) Accident Investigation and Report Writing
i) Technical skills training as identified by the CAE/SAA

2.4.2 Evidence of the prospective AE's familiarisation is to be fully documented in the AE's Logbook.

2.4.3 The prospective AE is to be mentored to overcome any gaps in knowledge or experience identified at the initial assessment.

2.4.4 A final assessment by the CAE is to confirm completion of Training Plan and readiness of the prospective AE for interview by the SAA.

2.5 Authorised Person Training

2.5.1 The initial suitability assessment by the AE is to set a training plan. This will include the training and mentoring as defined below:

a) MOD approved specialism specific training as Annexe D.
b) Company First aid and Fire training as deemed necessary by the AE/CAE
c) Technical skills training as identified by the AE

2.5.2 Evidence of the prospective AP's familiarisation is to be fully documented in the AP's Logbook.

2.5.3 The prospective AP is to be mentored, as appropriate, to achieve knowledge and experience identified during the initial assessment.

2.5.4 A final assessment by the AE is to confirm completion of the Training Plan

and the readiness of the prospective AP for appointment.

2.6 Skilled Person and Person in Charge

2.6.1 Skilled Persons (SKP) or Persons in Charge (PIC) are to undergo site induction training and meet the suitability criteria as described in JSP 375 Vol. 3 Chapter 2. The induction training is to include, but not limited to:

a) Awareness of the actions to take and reporting procedures should the system they are working on become unsafe.
b) How site specific hazards are managed
c) Task specific emergency and rescue procedures
d) Site fire arrangements and awareness
e) The issue of any applicable Safety Rules & Procedures Rulebook(s) available, covering that discipline

2.7 Work Teams

2.7.1 Details relating Work Team training are included in JSP 375 Vol. 3 Chaps. 5 and 6.

3. Logbooks

3.1 The requirement to document evidence of site and equipment familiarity will be met by means of a Logbook. Each prospective and active AE and AP will compile and maintain a personal Logbook for this purpose. The Logbook will be a personal record of AE/AP activity and is intended to be transferable between employers.

3.2 The Logbook is to be a multidisciplinary document, which will cover all JSP 375 Vol 3 disciplines for which the AE/AP is responsible. The Logbook will be divided into appropriate sections – each with its own contents page and sub-sections.

3.3 During audits, the AE or Co-ordinating AP (CAP) will review the training and familiarity requirements for each individual. Any additional training and familiarity required would then be identified in the audit report action plan.

3.4 Guidelines for building up a Logbook are given in Annex B page 123.

4. MOD Training Specifications

Introduction

This section of the document sets out

- the minimum learning outcomes and assessment criteria for training courses designed for persons intended to become, or who are appointed as, Authorised Persons for work on the defence estate,
- the pre-qualification and acceptance criteria for applicants for approved courses,
- the minimum system and equipment requirements that training providers must have available in order to be approved,
- the approval process and procedures for organisations intending to deliver Authorised Person training,
- the criteria for revocation of approvals and appeals procedures for training providers and course attendees.

Contents

4.1 General Requirements

4.1.1 Amendments

Amendments	Page No	Date	Inserted by

4.1.2 Course titles

4.1.2.1 Authorised Person (electrical) course identification.

a. Authorised Person HV & LV (AP(HVLV))
b. Authorised Person LV (AP(LV))
c. Authorised Person HV & LV Refresher (APR)
d. Authorised Person Airfield systems (AP(AIR))
e. Authorised Person Hazardous Areas (AP(HAZ))
f. AP(AIR), and AP(HAZ) are supplementary courses to be taken in addition to either AP(HVLV) or AP(LV).

4.1.2.2 Authorised Person (mechanical) course identification

a. Authorised Person (medical gas pipeline systems)
b. Authorised Person (boilers and pressure systems)
c. Authorised Person (petroleum)
d. Authorised Person (dental air and vacuum systems)

4.1.2.3 Authorised Person (confined spaces)

4.1.2.4 Authorised Person (working at height)

4.1.3 Authorised Person course summary

4.1.3.1 The courses are intended to ensure that participants can demonstrate a thorough understanding and detailed knowledge of the MOD's SRP and associated permit procedures. Course material includes:

4.1.3.2 Practical and procedural aspects of the SRP and appropriate statutory regulations.

4.1.3.3 The application of the MOD's SRP and associated permit procedures to typical systems and equipment.

4.1.4 Who should attend

4.1.4.1 The AP(electrical) courses are intended for suitably qualified M&E staff who have been nominated for appointment, or are appointed as AP (electrical) and Authorising Engineers and Authorising Engineers designates as part of their discipline specific training in respect of the following systems and installations:

a. HV distribution systems.
b. LV distribution systems.
c. Automatically/remotely controlled generating set installations.
d. Aeronautical ground lighting.
e. Hazardous areas.

4.1.4.2 The AP(mechanical) courses are intended for suitably qualified M&E staff who have been nominated for appointment, or are appointed as AP (mechanical) and Authorising Engineers and Authorising Engineers designates as part of their discipline specific training in respect of the following systems and installations:

a. Medical gas pipeline systems.
b. Dental air and vacuum systems.
c. Boilers and pressure systems.
d. Gas systems.
e. Petroleum.

4.2.4.3 The AP(working at height) courses are intended for suitably qualified staff who have been nominated for appointment, or are appointed as AP (working at height) and Authorising Engineers and Authorising Engineers designates as part of their discipline specific training.

4.2.4.4 The AP(confined spaces) courses are intended for suitably qualified staff who have been nominated for appointment, or are appointed as AP (confined spaces) and Authorising Engineers and Authorising Engineers designates as part of their discipline specific training.

4.1.5 Course preparation

4.1.5.1 Pre-course reading material may be recommended by the training provider to all applicants.

4.1.5.2 Applicants must have completed appropriate technical training.

4.1.5.3 Applicants must have a completed and countersigned log book where appropriate.

4.1.5.4 Applicants must be in possession of a completed copy of the technical competency assessment for AP at appendix 3 of the appropriate discipline specific annex.

4.1.5.5 Applicants must have completed any necessary fire training as described in Annex A to this chapter.

4.1.5.6 Applicants must have completed any necessary first aid training as described in Annex A to this chapter.

4.1.5.7 Applicants working for, or on behalf of, the MOD who have not previously completed an MOD approved AP or AE training course must have completed appropriate foundation training as described in section 4.3 of this chapter.

4.2 Training Provider Course Requirements

4.2.1 **Amendments**

Amendments	Page No	Date	Inserted by

4.2.2 Course applicant acceptance criteria

4.2.2.1 The training provider shall require the technical competency check list of appendix 3, of the discipline specific annex, to be completed for all course applicants working for, or on behalf of, the MOD prior to attendance on any MOD AP course, and they shall require the completed form to be returned no later than the first day of the selected course.

4.2.2.2 Where the technical competency check list is not completed the training provider shall reject course applicants unless they are satisfied that the prospective student will not adversely affect the performance of any other students on the course.

4.2.2.3 Training providers shall reject course applicants working for, or on behalf of, the MOD for MOD AP training, that are not in possession of a completed countersigned log book in accordance with the JSP375, volume 3, chapter 2.

4.2.2.4 The training provider shall require a copy of the countersigned section of the AP, or prospective AP's, log book to be forwarded to the training provider along with the course application.

4.2.2.5 This requirement may be waived at the discretion of the training provider to accommodate urgent operational requirements; providing that the training provider is satisfied that the prospective student will not adversely affect the performance of any other students on the course.

4.2.2.6 Where applicants not working for, or on behalf of, the MOD are admitted onto MOD approved courses the acceptance criteria shall be at the discretion of the training provider with the following proviso.

4.2.2.7 The discretionary procedure shall not set a lower standard of technical competency than that required of applicant working for, or on behalf of, the MOD.

4.2.2.8 Training providers may, at their discretion, use pre course questionnaires to establish technical suitability. However, where this option is not applied, the training provider shall report to the appropriate DE SAA any MOD contracted maintenance management organisation that consistently fails to properly prepare candidates for AP training.

4.2.3 Staff requirements

4.2.3.1 The staff requirements of paragraphs **Error! Reference source not found.** to **Error! Reference source not found.** shall be augmented as necessary by; appropriate emergency first aid and, or, fire training where such assistance is not immediately available from the normal staff compliment of the training location or where the nature of the training environment requires it.

4.2.3.2 In the context of the staff requirements of this document, assessors and verifiers/mentors should meet the requirements laid down by the QCA for these roles.

4.2.3.3 The staff requirements of paragraphs **Error! Reference source not found.** to **Error! Reference source not found.** shall not apply to the discipline DE SAA and DSAA where they are personally delivering lecture material or undertaking assessments.

4.2.4 Lecturers

4.2.4.1 Shall meet the following requirements:

4.2.4.2 Not more than four years prior to approval; lecturers shall have attended and successfully completed an MOD Approved AP course for each specialism they are intending to teach.

4.2.4.3 Be technically qualified to a minimum of NQF/QCF level 3 or equivalent in a relevant subject

4.2.4.4 Have been an AP or AE or held a similar position for a period of at least three years

4.2.4.5 Hold, or be working towards, a recognised teaching qualification certificate i.e. Adult and Further Education Teaching Certificate or equivalent qualification.

4.2.4.6 Experienced lecturing staff without these qualifications should have undergone a formal presentation training course and have three years further experience or be a chartered member of the Chartered Institute of Personnel and Development.

4.2.4.7 Staff meeting the requirements for lecturing may fulfil the subsidiary roles of assessors and verifier/mentor where it is considered appropriate by the DE appointed assessor.

4.2.5 Assessors

4.2.5.1 Where separately appointed shall meet the following requirements:

4.2.5.2 Not more than four years prior to approval; assessors shall have attended and successfully completed a MOD Approved AP course for each specialism they are intending to assess.

4.3.2.3 Be technically qualified to a minimum of NQF/QCF level 3 or equivalent in a relevant subject

4.2.5.4 Have been an AP or AE or held a similar position for a period of at least three years

4.2.5.5 Have undergone a formal training programme as an assessor, or be able to confirm a minimum of three years experience of formal assessment of competence-based courses to an externally set standard or be a chartered member the Chartered Institute of Personnel and Development.

4.2.5.6 Successfully complete the full assessment criteria for the unit to be assessed.

4.2.6 Internal verifier/mentor

4.2.6.1 Where separately appointed shall meet the following requirements:

4.2.6.2 Not more than four years prior to approval; verifier/mentors shall have attended and successfully completed a MOD approved AP Course for each relevant specialism.

4.2.6.3 Be technically qualified to a minimum of NQF/QCF level 3 or equivalent in a relevant subject

4.2.6.4 Have undergone a formal training programme as a verifier or be a chartered member the Chartered Institute of Personnel and Development.

4.2.6.5 Have attended an MOD Authorising Engineer workshop within the past 3 years.

4.2.7 Course structure

4.2.7.1 Detailed notes on discipline specific course structure, duration, student teacher ratio and grading and assessment are contained in the annexes relevant to the particular discipline.

4.2.8 Grading and assessment general requirements

4.2.8.1 Students making serious errors in marked practical exercises or other scenarios, whereby life may have been put at risk or equipment seriously damaged in real situations, are to be issued with a written statement of their errors, and they are to be given clear instructions on correct procedures. The written statement is to be entered onto an assessment sheet that shall be returned to their authorising engineer along with their course certificate or record of attendance as appropriate.

4.2.8.2 AP course: Part A exam, pass criteria are dependent on the agreed marking scheme, safety documentation and scenario questions; one mark is awarded for each relevant essential safety documentation and scenario assessment criteria and one mark is awarded for each relevant desirable safety documentation and scenario assessment criteria identified in the appropriate discipline section annex, appendix 1.

4.2.8.3. AP course students omitting any of the relevant essential requirements in the final scenario test papers are deemed to have failed the course, subject to appeal as per **Error! Reference source not found.**, regardless of the average of any other marks for any other works.

4.2.8.4 AP course: Part B exam, 75% pass mark, technical and procedural questions where appropriate; one mark is awarded for each "Must have" on the question paper. Additional correct entries may, at the discretion of the training provider, be taken into account as a whole, for cases where the student fails to reach the 75% pass mark but, achieves a mark of at least 70% and the justification is recorded in writing.

4.2.8.5 Where there is more than one requirement for a MS to be reviewed within a

courses learning outcomes, the training provider shall select 1 sample method statement for the students to review as an evening exercise.

4.2.8.6 Where the associated RA is not included within the MS, the associated RA should be separately included in the assessment exercise.

4.2.8.7 Practical exercises are to be undertaken as a group unless otherwise identified.

4.2.9 Course certificates

4.2.9.1 Course certificates may include any Training Organisation logo or crest and must have prior approval from the appropriate DE SAA for MOD use.

4.2.9.2 Course certificates must be issued within 7 working days of the course completion or following settlement of account.

4.2.9.3 Successful students shall be issued with a pass certificate, which shall be embossed with the training providers stamp and shall clearly display the following information.

a. Participant's name.
b. The words "Has Passed" followed by the full course Title and address of Training Centre.
c. Signature of Course tutor and/or a person of authority representing the Training Organisation.
d. Course start and completion dates.
e. Details of relevant formal Course Accreditation by DE

4.2.9.4 Attendance certificates may be issued at the discretion of the training provider and shall be so designed so as not to be confused with the pass certificate.

4.2.9.5 Attendee not working for, or on behalf of, the MOD and who are not marked to the same standard as those working for, or on behalf of, the MOD shall not be issued with certificates that might in any way be confused with those certificates issued to those working for, or on behalf of, the MOD.

4.2.10 Re-sits

4.2.10.1 Re-sits may be offered to students failing the any of the course assessments at the discretion of the training provider.

4.2.11 Appeals

4.2.11.1 Students working for, or on behalf of, the MOD who fail the part A exam in accordance with the requirements of clause **Error! Reference source not found.** may appeal to the discipline DE SAA who shall:

4.2.11.2 In cooperation with the training provider, review the appellants completed exercises and examination papers.

4.2.11.3 On completion of the review the DE SAA is to record their adjudication in writing and notify the outcome to the training provider who are to notify the student and any other relevant parties.

4.2.11.4 The appeals procedure for students not working for, or on behalf of, the MOD who fail the part A exam in accordance with the requirements of clause **Error! Reference source not found.**, is to be agreed between the training provider and the students employing organisation.

4.2.12 Moderation

4.2.12.1 To ensure that there is a consistent standard of assessment the training providers shall make available copies of their candidates completed test papers and scenarios for moderation on a minimum of a biennial basis by the DE appointed assessor.

4.2.13 Retention of records

4.2.13.1 Training providers shall retain each candidates attendance and examination records for a minimum of 5 years.

4.3 Training Provider Course Approval Procedure

4.3.1 **Amendments**

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4.3.2 Training provider course approval procedure

4.3.2.1 Organisations intending to deliver MOD approved AP training courses for the first time, are to apply in writing to the DE SAA for the particular discipline a minimum of 6 months before they propose to administer their initial course.

4.3.2.4 The DE SAA for the particular discipline will appoint an assessor within 15 working days of the receipt of the application.

4.3.2.5 Except where the DE appointed assessor is the SAA or DSAA for the particular discipline; The DE appointed assessor shall meet the lecturer or assessor staff requirements applicable to the training providers, and shall be fully conversant with the application and interpretation of the relevant SRP.

4.3.2.6 Organisations currently delivering MOD approved AP training courses will be subject to continuous assessment against this specification in accordance with paragraph 0.

4.3.2.5 An initial inspection of the training provider facilities shall be made by the DE appointed assessor within 2 calendar months of a request for course approval.

4.3.2.6 Where the training provider uses third party facilities such as those provided by hotels and conference centres: The training provider shall provide a written specification of the minimum level of facilities to be available for use by students and training provider staff.

4.3.2.7 Systems and equipment for practical exercises shall be assessed against the typical systems and equipment identified in appendix B of the discipline specific annexes of this document.

4.3.2.8 Where the DE appointed assessor considers the facilities to be inadequate for the proposed training; the training organisation will be expected to upgrade them inline with the DE appointed assessors recommendations before the approval process can proceed to item 0 of this procedure.

4.3.2.9 Where the systems and equipment are part of an operational installation made available for training purposes on an ad hoc basis: The training provider shall provide a written specification of the minimum level of systems and equipment to be available for use by students and training provider staff.

4.3.2.10 Details of the operational locations and the systems and equipment used shall be made available to the DE appointed assessor and access provided to said systems and equipment such that their suitability can be verified.

4.3.2.11 Proposed course content will be assessed by the DE appointed assessor against the learning outcomes and assessment criteria contained in this specification.

4.3.2.12 Course content may include; lesson plans, lecture notes, presentations, learning points, sample safety documentation, questions and scenarios etc

and shall be made available for initial assessment not less than 4 months before the training provider proposes to administer their initial course.

4.3.2.13 Where the DE appointed assessor considers the proposed course content to be inadequate for the proposed training; the training organisation will be expected to amend the content inline with the DE appointed assessors recommendations before the approval process can proceed to item 4.3.2.14 of this procedure.

4.3.2.14 Proposed lecturers, and where separately appointed, assessors, will be assessed for initial suitability against the staff requirements of this specification prior to the structure and delivery assessment.

4.3.2.15 The structure and delivery assessment will not be undertaken unless suitably qualified staff are available.

4.3.2.16 Course structure and delivery will where practicable be assessed at the site proposed for the training;

4.3.2.17 The course structure and delivery assessment will carried out by the DE appointed assessor in attendance with, where practicable, a class of appropriately qualified AE and AP not less than 1 month before any proposed initial course.

4.3.2.18 Where the course structure or delivery is considered inadequate for the proposed training; the training organisation will be expected to amend them inline with the DE appointed assessors recommendations prior to the reassessment of the course structure and delivery.

4.3.2.19 In the event of the course structure or delivery failing to meet the required standard and there being less than 1 month before any first proposed course, then that course shall be cancelled until such time as the approval process is completed.

4.3.2.20 For each assessed element, or part thereof, of the course delivered by a given lecturer or assessor, a Training Provider Delivery Competence Assessment shall be completed by the DE appointed assessor, sample assessment sheets are shown at section 0.

4.3.2.21 For each element of the course, a Course Element Evaluation form shall be completed by the DE appointed assessor, a sample evaluation form is shown at section 0.

4.3.2.22 A course element is a specific subject area delivered over a single lecture or over multiple lectures.

4.3.2.23 Training providers shall develop course elements appropriate to the training material and these shall form part of the pre course material presented as part of the approval process.

4.3.2.24 Example course elements for AP(LV), APR and AP(HVLV);

a. Application of Safety Documentation
b. HV systems (AP(HVLV) only)
c. LV systems

d. Interpretation of Protection Operation
e. Statutory Regulations
f. Application of SRP
g. Switching including fault isolation
h. Cable Identification
i. Review of Contractors Method Statements
j. Skilled Person Interviewing/Appointment
k. UPS and Standby systems

4.3.2.25 Lecturers assessed as practitioners or expert, by the DE appointed assessor, in the delivery of at least three elements of the course will be approved to deliver assessed content unsupervised for all elements of the course. With the proviso that one of the three elements is either the application of safety documentation or the application of the SRP.

4.3.2.26 Lecturers assessed as supervised practitioners, by the DE appointed assessor, will be approved to deliver assessed content in the presence of a practitioner or expert and where necessary will be reassessed by the DE appointed assessor at the request of the training provider after a minimum of 20 hours supervised delivery of the relevant course elements.

4.3.2.27 Lecturers assessed as practitioners or expert, by the DE appointed assessor, in less than three elements of the course will be approved to deliver assessed content unsupervised only for those elements of the course for which they have been assessed. For all other course elements the requirements of paragraph 0 will apply.

4.3.2.28 Separately appointed assessors shall be assessed in accordance with paragraphs 4.3.2.25 to 0, except that the assessment shall be with respect to the practical exercises.

4.3.2.29 Lecturers and assessors meeting the requirements of paragraph 4.3.2.25 in the initial or later DE assessments may act as the DE appointed assessor and conduct further assessments in accordance with paragraphs 0 and 4.3.2.25 to 0 for the purpose of appointing lecturers and assessors for the training organisation for which they hold their appointment as a lecturers or assessor.

4.3.2.30 A written record of the names or name of any lecturer or assessor appointed in accordance with paragraph 0 shall be provided by the training provider to the appropriate DE SAA within 14 days of their assessment.

4.3.2.31 Approved course facilities, material and the learning outcomes and assessment criteria of this specification a minimum of once during the approval period.

4.3.2.32 Courses shall be approved only after all facilities, systems, equipment and course material has been assessed as satisfactory and the course lecturers have been assessed and at least one has been assessed as expert.

4.3.2.33 DE shall issue a certificate of approval signed by the SAA for each approved course which is to be prominently displayed at the course location.

4.3.2.34 Training providers may request further DE assessment at any time during the course approval period with an assessment taking place not more than 2

months after the initial request.

4.3.3 Amendments

4.3.3.1 No amendment, modification or change to the approved course facilities, structure, equipment, systems or content shall be made without the prior approval in writing of the DE SAA, or their appointed representative with the following provisos.

4.3.3.2 Paragraph 4.3.3.1 does not preclude changes to lecture delivery or style, or the correction of errors in the presentation material.

4.3.3.3 Paragraph 4.3.3.1 does not preclude the updating of agreed content to reflect technological changes

4.3.3.4 Updates such as those described in sub paragraphs 0 and 0 above should be notified to the appropriate DE SAA in writing as soon as reasonably practicable.

4.3.3.5 Paragraph 4.3.3.1 does preclude changes to the content with respect to the interpretation or application of the SRP.

4.3.3.6 Paragraph 4.3.3.1 does preclude the addition to, or removal of, agreed course elements.

4.3.3.7 Paragraph 4.3.3.1 does preclude changes to the training systems and equipment where those changes impact on the practical exercises forming part of an MOD approved AP training course.

4.3.3.8 Where there is any doubt with respect to any of the above the training provider shall consult with the appropriate DE SAA.

4.3.3.9 Where amendments to the course content or structure are required by DE.

4.3.3.10 The DE appointed assessor will co-ordinate the implementation of the amendments and the approval of the new content or structure such that, all the approved training providers have an equal opportunity to deliver the new content or structure within the agreed timescale.

4.3.2.11 Time scales for the implementation of amendments to course content or structure shall be agreed between DE and the approved training providers only after the new content or structure has been agreed.

4.3.4 Withdrawal of approval

4.3.4.1 Course approval may be withdrawn or suspended by the appropriate DE SAA at any time in the following circumstances:

4.3.4.2 Unauthorised modification to course content or structure.

4.3.4.3 Failure to implement DE required amendments to course content or structure within the agreed timescale.

4.3.4.4 Where reassessment identifies that the standard of facilities, systems,

equipment, content, delivery or written assessment has fallen below acceptable levels.

4.3.4.5 Where moderation shows the marking scheme is being applied inappropriately.

4.3.4.6 Issue of certificates to non course attendees. (mandatory withdrawal of approval)

4.3.4.7 Falsification of student records. (mandatory withdrawal of approval)

4.3.4.8 Failure to maintain student records.

4.3.4.9 Staff substitution by unapproved staff.

4.3.4.10 In extreme circumstances, i.e. sudden illness, approved staff may be substituted by unapproved staff; providing that the appropriate DE SAA is notified of the substitution and the reasons for it verbally as soon as reasonably practicable and in writing within 7 days of its occurrence.

4.3.4.11 Where course approval is withdrawn or suspended it shall be in writing and the DE PAA shall conduct any subsequent investigation, in cooperation with the SAA and the training provider, and where applicable propose any action necessary to lift the suspension or renew the approval.

4.3.4.12 DE will retain records of all assessment related documentation for a minimum of 5 years.

4.3.5 Sample Delivery Competence and Course Element assessment sheets

DEFENCE ESTATE - AUTHORISED PERSON TRAINING			
TRAINING PROVIDER DELIVERY COMPETENCE CERTIFICATION			
LECTURER ASSESSMENT			
NAME:			
COURSE:			
Technical Qualifications			
Training Qualifications			
AP Course			
AP/AE Experience			
First Aid Certificate			
DE AE Workshop			
Other Experience			
	ASSESSMENT		
COURSE ELEMENTS	Supervised Practitioner	Practitioner	Expert
Element - 1			
Element - 2			
Element - 3			
Element - 4			
Element - 5			
Element - 6			
Element - 7			
Element - 8			
Element - 9			
Element - 10			
Element - 11			
Element - 12			
End test - 1			
End test - 2			
DE Appointed Assessor			
Signed		Date	

Evaluation						
Element title:	lecturer:					
Question	Excellent	Very good	Good	Fair	Poor	Very poor
Did the lecturer express the element content clearly and fluently?						
Your confidence in the lecturers knowledge of the element subject was?						
The lecturers effectiveness in teaching the subject matter was?						
Clarity of the lecturers voice was?						
The pace of the lectures delivery was?						
The presentation of alternative explanations when needed was?						
The use of examples and illustrations was?						
Lecturers enthusiasm for the subject was?						
The relevance of questions or problems raised by the lecturer was?						
Lecturers timing of question sessions was?						
Lecturers contribution to, or guidance of, class discussions was?						
Answers to students questions were?						
The lecturers ability to maintain class interest was?						
The relevance of the element content to desired learning outcomes was?						
The element content was?						
The scenarios used were?						
Were visual aids adequate and effective?						
Was the use of visual aids appropriate?						
The lecturer notes/handouts were?						
In the summing up the lecturers emphasis of the main points was?						
Was the sequence of presentation logical/appropriate						

General comments:

DEFENCE ESTATE - AUTHORISED PERSON TRAINING				
TRAINING PROVIDER DELIVERY COMPETENCE CERTIFICATION				
ASSESSOR ASSESSMENT				
NAME:				
COURSE:				
Technical Qualifications				
Training Qualifications				
AP Course				
AP/AE Experience				
First Aid Certificate				
DE AE Workshop				
Other Experience				
	ASSESSMENT			
COURSE ELEMENTS	Supervised Practitioner	Practitioner	Expert	
Practical - 1				
Practical - 2				
Practical - 3				
Practical - 4				
Practical - 5				
Practical - 6				
Practical - 7				
Practical - 8				
Practical - 9				
Practical - 10				
End test - 1				
End test - 2				
DE Appointed Assessor				
Signed			Date	

Evaluation						
Practical title:	Assessor:					
Question	Excellent	Very good	Good	Fair	Poor	Very poor
Did the assessor clearly explain any safety precautions to be followed?						
Did the assessor clearly explain the sequence of operations?						
Did the assessor clearly explain the desired outcome of the sequence of operations						
Did the assessor clearly explain the application of the SRP with respect to the sequence of operations?						
Did the assessor clearly explain the application of the SRP with respect to the equipment being operated?						
Did the assessor ensure that the whole group gained appropriate experience of the operations undertaken?						
Did the assessor identify and correct errors of commission or omission in a timely and effective manner?						
The presentation of alternative sequences of operation when needed was?						
Your confidence in the assessors knowledge of the practical subject was?						
The assessors effectiveness in guiding the practical was?						
Clarity of the assessors voice was?						
The use of examples and illustrations was?						
The assessors enthusiasm for the subject was?						
The relevance of questions or problems raised by the assessor was?						
The assessors contribution to, or guidance of, discussions was?						
Answers to students questions were?						
The assessors ability to maintain group interest was?						
The relevance of the practical content to desired learning outcomes was?						
The practical content was?						
In the summing up the assessors emphasis of the main points was?						

General comments:

DEFENCE ESTATE - AUTHORISED PERSON TRAINING		
TRAINING PROVIDER COURSE ELEMENT EVALUATION		
COURSE:		
COURSE ELEMENT		
	SATISFACTORY	**NOT SATISFACTORY**
LESSON PLAN		
LEARNING POINTS		
PRESENTATION MATERIAL		
HANDOUTS		
SCENARIOS		
SAFETY DOCUMENTATION		
OTHER MATERIAL		
ASSESSMENT		
DE Appointed Assessor		
Signed		Date

4.4 Awareness course

4.4.1 Amendments

Amendments	Page No	Date	Inserted by

4.4.2 Contents

Section 4.4 - Appendices

4.4.2.1 General

4.4.2.1.1 As part of its duty of care under the latest edition Health and Safety at Work etc. Act, The Ministry of Defence (MOD), through Defence Estates (DE), has approved a number of organisations to provide training in specialist areas. This is to ensure that all personnel involved in activities having significant risk, be they employed directly or by contractors, are fully aware of, and have experience in, its safe systems of work, permit systems and procedures. The significant risk activities relate to:

a. Electricity
b. Boilers, pressure, gas and medical gas systems
c. Petroleum
d. Confined Spaces
e. Working at Height

4.4.2.1.2 Prior to embarking upon training specific to the above activities, it is considered necessary that all first time students aspiring to become Authorising Engineers (AEs) or Authorised Persons (APs) attend an Awareness course that will introduce them to the MOD, DE and the ethos and structure supporting the MOD Safety Rules and Procedures. The course will also offer the opportunity for students to gain an insight into general topics such as techniques of behavioural and structured situational interviewing and risk assessment.

4.4.2.1.3 The course has been constructed in a modular format to enable flexibility in delivery from a number of sources. However, this does not preclude the entire syllabus being offered by a single organisation. Prospective AEs and APs will only be deemed to have finished the course upon receipt of completion certificates for all modules.

4.4.2.2 Awareness Course Module 1

4.4.2.2.1 Organisations wishing to offer the Awareness Course, module 1 will need to comply with the following requirements:

4.4.2.3 Accommodation

4.4.2.3.1 Be able to offer the course at a suitable venue provided either by the students' employer or by themselves. The training provider must state any geographical limitations relating to venue when offering the course.

4.4.2.4 Courses

4.4.2.4.1 The training organisation will be responsible for developing all course material that must be designed to meet the course content for modules 1, 2 and 3 as contained in Annexes A to D inclusive.

4.4.2.4.2 Lectures are to be reinforced by pre - prepared courses notes and, where appropriate, backed up with visual aids.

4.4.2.4.3 Lecture material is to be supported by written exercise sessions in the

classroom.

4.4.2.5 Staffing

4.4.2.5.1 Suitably qualified lecturers (including guest lecturers) with recent relevant practical experience of the course material, the associated MOD procedures, equipment and current legislation.

4.4.2.5.2 DE shall approve all course lecturers (including guest lecturers).

4.4.2.5.3 DE reserve the right for their own specialist lecturers to give presentations about MOD policy, procedures etc. (Details of any such arrangements will be agreed with the training organisation well in advance to ensure that they have adequate notice of any timetable adjustments which may have to be made.)

4.4.2.6 Administration

4.4.2.6.1 Administration facilities shall include the following:

a. Sending out course joining instructions to participants.
b. Issue of Course Certificates.
c. Maintenance of up to date course records of participants (including proof of attendance).
d. Ensuring that all courses are kept up to date with latest legislation and MoD requirements and advise the DE Principal Authorising Authority of any consequential changes to the course content.

4.4.2.7 Equipment

4.4.2.7.1 From time to time MoD may loan to the training organisation certain items of equipment which represent a typical cross section of that used on the MoD Estate. The prospective recipient will be required to:

a. Dismantle, transport and reassemble this equipment.

b. Ensure correct removal, installation and connection without damage.

c. Fully service and maintain the equipment in a safe and, where applicable, working condition.

d. Carry out safety checks as necessary to fulfil statutory requirements.

e. Permit DE staff to view and assess the condition of the equipment at any time.

4.4.2.8 Training Standards

4.4.2.8.1 The training organisation should be ISO 9000 approved, working towards ISO 9000 or working to an equivalent standard.

4.4.2.8.2 DE reserves the right to undertake periodic audits of training courses for the purpose quality assurance and moderation.

4.4.2.9 Awareness Course Modules 2 & 3

4.4.2.9.1 Course module 2 (Principles and purpose of audit) and module 3 (Interviewing Techniques), to cover the topics described within Annexes C and D, may also be provided directly by the prospective AEs or APs employer, using either “in house” expertise, third party professionals or web/CD based training resources.

4.4.2.9.2 Organisations offering the Awareness Course, modules 2 and 3 are to comply with the requirements described in sections 2 & 3 above.

4.4.2.10 Confirmation of Attendance

4.4.2.10.1 Certificates are to be issued by the training provider to students confirming completion of each module.

Appendix 4.4 - A

AWARENESS COURSE FOR MOD SAFE SYSTEM OF WORK PRACTITIONERS - SYLLABUS

Purpose:

To introduce MOD, to explain how it Manages Health and Safety and to provide a Awareness for the operation of JSP 375 Volume 3.

Who should attend:

Prospective Authorised Persons and Authorising Engineers and those who need a basic knowledge of the concepts and tools associated with the MOD Safe System of Work.

Pre Qualifications:

None

Attendance Profile:

Unit modules can be attended in any order. Prospective Authorised Persons and Authorising Engineers must have completed Modules 1 to 3 inclusive before proceeding with site familiarisation.

Tuition Provision:

Modules 1 2 & 3 are to be presented by DE approved training providers

Module 1: Introduction to the MOD Safe System of Work and the Fundamentals of Safety & Risk Assessment

Duration: 7 hours

The MOD

- Departmental business
- DE
- DE philosophy for the Management of Health and Safety
- Safe System of Work – Safety Rules and Procedures (SRPs)
- Duties and Responsibilities of the AE and AP
  - Appointment Process
  - Duties
  - Log Books and Diaries
  - Communications
  - Authority exercised by AE's and AP's
- Continuous Improvement
  - Formal and Informal Feedback
  - Management of Change Control

Health & Safety legislation

- Health & Safety at Work etc. Act
- Management of Health & Safety at Work Regulations
- Control of Substances Hazardous to Health Regulations (COSHH)
- Health & Safety (First Aid) Regulations
- Personal Protective Equipment at Work Regulations
- Provision and Use of Work Equipment Regulations
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- Health and Safety (Safety Signs and Signals) Regulations
- Noise at Work Regulations
- The Dangerous Substances and Explosive Atmospheres Regulations
- The Control of Asbestos at Work Regulations
- Personal Protective Equipment at Work Regulations
  Construction (Design & Management) Regulations (CDM)

Principles of risk assessment

- Tools and techniques of risk identification
  - Checklists
  - Flowcharting
  - Interviewing
- Outputs from risk identification
  - Sources of risk
  - Potential risk events and risk symptoms
- HSE – 5 Steps to Risk Assessment
- HSE- A guide to risk assessment

Module 2: Principles and purpose of audit

Duration: 3.5 hours

- Purposes
- The role of the Auditor
- The role of the Auditee

Module 3: Principles of behavioural and situational interviewing

Duration: 3.5 hours

- Communication skills and difficulties
- Asking behavioural based questions
- Structuring the interview
- Documenting the interview
- Using job simulations to evaluate behaviour
- Using structure situational questions

Outcomes

Attendees that are conversant in the taught subject areas and are able to demonstrate their application in respect of the MOD safe system of work where appropriate

Appendix 4.4 - B

AWARENESS COURSE FOR MOD SAFE SYSTEM OF WORK PRACTITIONERS - Synopsis of Sessions for Module 1 - Introduction to the MOD Safe System of Work and the Fundamentals of Safety & Risk Assessment

Duration: 7 hours

Session 1

Arrival, Registration and Introduction.

Carry out general course administration requirements.

Introduction, to include student's background, and the type of work that they will be carrying out on MoD establishments.

Session 2

Discuss the purpose and limitations of the course.

Identify the Assessment methods to be used on the course.

Session 3

The Ministry of Defence and Defence Estates

Information/Materials to be supplied by Defence Estates

This session should cover:

The relationship between MoD and the Defence Estates, their respective cultures etc.

The identification of the Duty holder on the MoD establishment as per Defence Council Instruction (DCI) Gen 26/05(for detail reference http://www.mod.uk/linked_files/dsef/ohs/DEHandSDuties.pdf

The communication routes between Defence Estates and the Maintenance Management Organisation.

The DE structure for Health and Safety Policy

DE and MOD Websites for health and safety information and instructions

a) Joint Services Publication 375 http://www.mod.uk/dsef/ohs/jsp375.htm

Communication routes between DE and the MMO's

a) Policy Instructions

b) 'Continuous Improvement' system

Session 4

Associated Legislation

An overview of the latest editions of the following legislation:

1) The Health and Safety at Work Act

2) Management of Health and Safety at Work Regulations

3) Construction (Health, Safety and Welfare) Regulations

4) Control Of Substances Hazardous to Health Regulations (COSHH)

5) Health and Safety (First Aid) Regulations

6) Lifting Operations and Lifting Equipment Regulations

7) Personal Protective Equipment at Work Regulations

8) Personal Protective Equipment (EC Directive) (Amendment) Regulations

9) Provision and Use of Work Equipment Regulations

10) Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

11) Health and Safety (Safety Signs and Signals) Regulations

12) Noise at Work Regulations

13) The Dangerous Substances and Explosive Atmospheres Regulations

14) The Control of Asbestos at Work Regulations

15) The Construction (Design and Management Regulations CDM.

Note with particular emphasis on Regulation 2 of the Health and Safety at Work Act and Regulation 3 of the Management of health and Safety at Work Regulations (introduction to the need for risk assessment)

Session 5

Roles, Duties and Appointment Procedures of Personnel.

At the end of the session the delegate will be able to:

1. State the role of Duty Holders as per DCI Gen 26/05
2. Define the role of Duty Holders as per DCI Gen 26/05
3. State the role of the Principle Authorising Authority.
4. Define the duties of the Principle Authorising Authority.
5. State the role of the Senior Authorising Authority.
6. Define the duties of the Senior Authorising Engineer.
7. State the role of the Co-ordinating Authorising Engineers and Authorising Engineers.
8. Show an understanding of the duties of the Co-ordinating Authorising Engineers and Authorising Engineers.
9. Be able to state the role & duties of a co-ordinating Authorised Person.
10. Be able to state the role & duties of an Authorised Person.
11. Demonstrate knowledge of the appointment procedures of an Authorised Person.
12. State the role of Skilled Persons.
13. State the role of Persons in Charge.
14. State the role of Accompanying Safety Persons.
15. Show an understanding of the Skilled Persons Suitability criteria.
16. Demonstrate knowledge or the appointment procedures of Skilled Persons.
17. Demonstrate knowledge of the appointment procedures for Accompanying Safety Persons.
18. State the content & purpose of Authorised Person Log Books & Diaries.

Session 6

Management of Health and Safety Regulations 1999

An in-depth look at the following regulations:

1. Regulation 3. Risk Assessment.
2. Regulation 5. Health and Safety Arrangements.
3. Regulation 7. Health and Safety Assistance.
4. Regulation 8. Procedures for Serious and Imminent Danger.
5. Regulation 9. Contacts with External Services.
6. Regulation 10. Provision of information to Employees
7. Regulation 11 and 12. Co-operation and Co-ordination.
8. Regulation 13.Health and Safety Training Capabilities.
9. Regulation 14. Employees Duties.
10. Regulation 15. Temporary Workers.
11. Regulation 16. Risk Assessment with Regards to New and Expectant Mothers.
12. Regulation 19. Protection of Young Workers.

Session 7

Principles of Risk Assessment

1) State what 'Risk Assessment' is.
2) Be able to define 'Hazard' and 'Risk'.
3) State the five steps Risk Assessment.
    a) Identify the Hazards.
    b) Determine 'Who Might be Harmed and How'.
    c) Evaluate the risks to decide whether existing precautions are adequate, or are more required.
    d) Make a record of the assessment and your findings.
    e) Review and revise the assessment if necessary.
4) Generic Risk Assessments

a) Discuss the use of generic risk assessments.

b) Identify the limits of these assessments.

c) Identify the need to modify these assessments to cope with particular site conditions.

Give an understanding of the need to modify both specific and generic risk assessments to identify changes in equipment, working practices or site conditions.

Session 8

Practical Risk Assessment

The students will undertake some general risk assessments for practice in applying the five basic steps, and the take part in group discussions to determine their relevance to the task, and to identify any omissions or improvements to them.

Appendix 4.4 - C

AWARENESS COURSE FOR MOD SAFE SYSTEM OF WORK PRACTITIONERS - Synopsis of Sessions for Module 2 - Principles and purpose of audit

Duration: 3.5 hours

Session 1

Arrival, Registration and Introduction.

Carry out general course administration requirements.

Introduction, to include students background, and the type of work that they will be carrying out on MoD establishments.

Session 2

Discuss the purpose and limitations of the course.

The purpose of the module is to provide the student with a basic understanding of the general principles of audit and the need for their application. In the context of JSP 375 Volume 3 Audits are carried out to formally verify that the processes and procedures of JSP375 Volume 3 are being implemented, monitored and controlled appropriately. They serve to assure, in concert with monitoring, that the Secretary of State for Defence's Health and Safety policy is being fully and correctly implemented. (*JSP 375 Volume 3 Chapter 2 Section 8.2*).

Identify the Assessment methods to be used on the course.

Session 3

Principle and Purpose of the Audit process.

1) State the requirements of JSP 375 Vol 3 Chap 2 Section 8, and in particular

2) AP & CAP assessments of Skilled Persons

3) AE & CAE audits of Authorised Persons

4) Records required in the AP Diary /Log

5) The Audit report

6) Remedial Plans

Appendix 4.4 - D

AWARENESS COURSE FOR MOD SAFE SYSTEM OF WORK PRACTITIONERS - Synopsis of Sessions for Module 3 - Principles of behavioural and situational interviewing

Duration: 3.5 hours

Session 1

Arrival, Registration and Introduction.

Carry out general course administration requirements.

Introduction, to include students background, and the type of work that they will be carrying out on MoD establishments.

Session 2

Discuss the purpose and limitations of the course.

The purpose of the module is to provide the student with a basic understanding of the principles of Behavioural and Structured Situational Interviewing and their application.

Identify the Assessment methods to be used on the course.

Session 3

Behavioural Interviewing

1. **What is Behavioural Interviewing?**
   Explain how it:
   - Compares with other interviewing techniques
   - Indicates how people behave in real situations
   - Builds on interviewee's own experiences
   - Excludes the hypothetical
   - Enables soft skills to be tested
   - Uses open questions
   - Relies on candour and trust

2. **Preparing for the Interview**
   Explain the need to:
   - Research the interviewee
   - Prepare a list of opening questions that are relevant to the information sought by the interviewer.
   - Do not include questions to which your research has provided answers
   - Chose a setting that will promote openness and reflection
   - Set a realistic schedule

3. During the Interview

Expand on the following topic elements:

Manage time:

- 10% for opening
  Welcome the interviewee
  Explain purpose of interview and how it will be conducted

- 70% for questioning
  Record evolution of questions
  Use 3Ws + H (What? When? Where? + How?) principle.
  Collect facts:
  Have "the three elements" been given?
  i. A description of the situation
  ii. How the situation was addressed
  iii. What the outcome was

Rate answers:

Cold: Not experiential – pose question again
Warm: Includes only one or two of the "three elements" – evolve questioning to obtain other elements
Hot: Includes all three elements

- 20% for closure
  Feedback and recap
  Use to determine:
  Whether interviewee was paying attention.
  Whether the interviewee was constructing imaginary situations.
  What is important to the interviewee.
  Whether the interviewee is interested in what they are or will be doing.

4. After the Interview

Explain why there is a need to:

- Make record as soon as possible after interview, using memory and notes compiled during the interview.
- Record only facts

Session 4

Structured Situational Interviewing

1. What is Structured Situational Interviewing?

Provide further detail on:

- Used in conjunction with the behavioural interview.
- Utilises hypothetical situations (case studies).
- Moves the interviewees focus from the past to the present.
- Tests the interviewee's aptitude in respect of work they are currently, or will be, performing.
- Allows a interviewee to experience what will be required of them.

2. Preparing for the Interview

Expand and explain the following:

- Assemble the situation into a "script".
- Test the questions on peers and improve where necessary.
- Chose an appropriate setting (will demonstrations be required?).

- Set a realistic schedule

3. During the Interview

Expand and explain the following:

- Define the initial situation.
- Ask open questions as the scripted situation evolves.
- Record the interviewee's performance.
- Seek feedback during the closure phase.

4. After the Interview

Explain why there is a need to:

- Make a factual record as soon as possible after interview, using memory and notes compiled during the interview.

4.5 AP Electrical Courses - Course Specification

4.5.1 **Amendments**

Amendments	Page No	Date	Inserted by

4.5.2 Student teacher ratio

4.9.3.1 Maximum of 4 to 1 for practical exercises.

4.9.3 Course attendance:

4.9.4.1 Nominal maximum of 12 students per course with an absolute maximum of 16 students per course.

4.9.4 Course structure

4.5.4.1 The AP(HVLV) courses shall provide simulation of at least 10 written scenarios involving the production of safety documentation, with at least four involving the physical operation of equipment. The AP(LV) and APR course shall provide simulation of at least 3 written scenarios involving the production of safety documentation, with at least two involving the physical operation of equipment.

4.5.4.2 Supplementary courses should provide at least 2 written scenarios involving the physical operation of equipment and the production of safety documentation.

4.5.4.3 Where suitable computer simulation is available for AP(HVLV), AP(LV) and APR courses, the number of written scenarios, involving the production of safety documentation, may be reduced provided that a larger number of computer simulations is included, however a minimum of 4 practical exercises involving the production of safety documentation must be assessed for AP(HVLV) and 2 for AP(LV) and APR. Typical practical scenarios would include situations such as:

a. Moving open point of a ring;
b. Isolating faulty ring section, and re-energising;
c. Transferring loads between bus sections;
d. Preparing an ISS with two incoming supplies and a bus coupler for maintenance;
e. VT isolation;
f. Cable identification, isolation, earthing, testing and spiking;
g. Bus-bar earthing;
h. Noting relay and fuse operations and interpreting to identify faults;
i. Checking unfamiliar switchgear for operating ratings etc.
j. Operation of equipment covered by an operational restriction
k. AGL cable identification and testing;
l. HV pressure testing;
m. Equipment isolation in preparation for work or test. UPS systems, HV equipment in AGL installations, generators, for maintenance etc.

4.5.4.4 AP electrical courses should use a combination of whole class teaching and guided practical individual/group exercises, and where technical content specific to practical exercises is required this should be delivered immediately prior to the practical exercise.

4.5.5 Course duration

4.5.5.1 At the discretion of the course provider with the following provisos:

4.5.5.2 A minimum of 60 hours contact time for AP(HVLV).

4.5.5.3 A minimum of 30 hours contact time for AP(LV) and APR.

4.5.5.4 A minimum of 20 hours contact time for AP(AIR), and AP(HAZ) .

4.5.6 Assessment and grading AP Electrical courses

4.5.6.1. Continuous written and practical assessment with final exams. It will be the individual training course providers responsibility to compile questions and scenarios for the exercises, assessments and final exams.

4.5.6.2 The learning outcomes and assessment criteria of this specification should be used either singularly or in combination to develop the questions and scenarios.

4.5.6.3 Where there are multiple assessment criteria these may be used to develop either single or multiple questions for the purpose of the final exams.

4.5.6.4. At the end of the course the participants will complete a test paper which will have two parts:

Part A: Operational scenarios. The candidates must produce appropriate safety documentation in order to safely undertake the work and/or tests required to complete the scenarios. Assessment criteria for electrical scenarios and safety documentation are listed in Appendix A.

Part B: Questions on statutory regulations, the application of the SRP and safety related technical aspects of appropriate systems and equipment. Assessment criteria for part B are included along with the learning outcomes in the body of this Annex.

4.5.6.5 AP electrical course assessment requirements:

a. AP(HVLV) minimum course assessments:

3 x Scenario based evening exercises with written assessment
1 x HV or 1 x LV and Method Statement review with class assessment
4 x Practical exercises comprising at least 2 x HV and 2 x LV with written assessment

b. APR minimum course assessments:

2 x Scenario based evening exercises with written assessment
1 x LV and Method Statement review with class assessment
2 x Practical exercises comprising at least 1 x HV and 1 x LV with written assessment

c. AP(LV) minimum course assessments:

2 x Scenario based evening exercises with written assessment
1 x LV and Method Statement review with class assessment
2 x Practical exercises with written assessment

d. AP(AIR), AP(HAZ) minimum course assessments:

1 x Evening exercises with written assessment
1 x Method Statement review with class assessment
2 x Practical exercises with written assessment

e. All courses final Exam – 2 parts:

Part A: Written test exercise. (the SRP only may be used) (2 x operational scenario based). Pass criteria; All relevant essential safety documentation and scenario assessment criteria of appendix A and relevant desirable safety documentation and scenario assessment criteria of appendix A as per the training provider marking scheme.

Part B: Open book Question paper. Pass criteria; 75% pass mark

4.5.6.6. The marking scheme for the questions and scenarios for the examined components of the course shall be formally assessed and approved by the DE appointed assessor for their suitability.

4.5.7. Learning outcomes and assessment criteria introduction

4.5.7.1 The learning outcomes and assessment criteria detailed in the following sections identify the minimum level of technical and procedural knowledge that their respective courses are intended to deliver. They should be used to develop course content, test questions and scenarios and they will form the basis of the DE course content assessment during the course approval procedure.

4.5.8. Learning outcomes: AP (electrical) HV & LV (AP(HVLV) and APR

4.5.8.1 Demonstrate an understanding that compliance with the statutory regulations and MOD Electrical Safety Rules (hereafter referred to as the SRP) is mandatory.

Assessment; Test question
Must have:
JSP375 Volume 1 chapter 2 Secretary of States declaration.
Where appropriate; contractual requirement.

4.5.8.2 Demonstrate an understanding of the minimum statutory requirements for new installations before handover to MOD.

Assessment; Test question
Must have:
Maintainability
Access
Lighting
Fit for intended purpose
Documented

4.5.8.3 Demonstrate an understanding that where there are conflicting requirements between the SRP and Statutory Regulations, Statutory Regulations take priority and conflicts are to be referred to the SAA (electrical).

Assessment; Test question
Must have:
Statutory Regulations take priority
Conflicts are to be referred to the SAA (electrical)

4.5.8.4 Demonstrate an understanding of the difference between permit to work systems, safe systems of work and risk assessment.

Assessment; Test question
Must have:
Legal requirement is for risk assessment
Legal requirement for Safe System of Work which may require written risk assessment, method statement and permit system for any complex task.

4.5.8.5 Identify the need for demarcation agreements and demonstrate an understanding of their purpose.

Assessment; Practical and Test question

Must have:
- Demarcation at main intakes
- Allocation of operational responsibility
- Switching permissions
- See safety documentation and scenario assessment criteria

4.5.8.6 Identify what types of procedures may be used on sites where demarcation agreements exist.

Assessment; Test question

Must have:
- Isolation and earthing certificate
- Switching permissions
- Maintenance agreements

4.5.8.7 Demonstrate an understanding of the need to liaise with the other user(s) to ensure that they are fully aware of the work in hand and any impact their part of the system.

Assessment; Practical and Test question

Must have:
- Need to communicate
- Potential impact of work i.e. fault level, loss of supply, voltage sags etc.
- Permission for work
- See safety documentation and scenario assessment criteria.

4.5.8.8 Identify that there may be local variations to the SRP to comply with host nation statutory regulations for overseas use.

Assessment; Test question

Must have:
- Local statutory regulations have precedence where they set a more onerous requirement.
- SRP is minimum standard

4.5.8.9 Demonstrate an understanding that every skilled person must be assessed and that every electrical skilled person issued with a copy of the relevant Safety Rule Book.

Assessment; Test question and practical

Must have: At least 4;
- Appointment by company letter
- Ad hoc procedures
- Need to brief on SRP
- Need to brief on site specific procedures
- Not all SP undertaking electrical work
- Need to brief non electrical skilled person on electrical danger
- Personal assessment
- Issue of Safety Rule Book

4.5.8.10 Demonstrate an understanding of the limits of the scope of the SRP to specific areas and safety aspects.

Assessment; Test question

Must have:
- Disconnected from system
- Not energised by other means

4.5.8.11 Demonstrate an understanding why a record of all safety related information given to third parties or assessed shall be kept on file for reference.

Assessment; Test question
Must have:
Demonstration of due diligence.

4.5.8.12 Demonstrate an understanding of the correct procedure for record keeping and ensuring the accuracy of the system operating records.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.8.13 Identify typical equipment all indoor substations and switch rooms might have available and identify which mandatory and optional posters should be displayed.

Assessment; Test question
Must have: At least 4
Emergency lighting
Fire extinguisher
Eye wash
First aid kit
Health and Safety at Work Act
Treatment of electric shock
SRP tables.

4.5.8.14 Demonstrate an understanding why LV and HV equipment and switch rooms must be kept locked when left unattended.

Assessment; Test question
Must have:
Need to prevent unauthorised access
Need to prevent unauthorised operation
Safety of third parties

4.5.8.15 Demonstrate an understanding that switchgear and equipment forming part of an isolation and earthing arrangement must be locked off, wherever practicable, to prevent unauthorised operation.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.8.16 Correctly identify where tables HV1 and HV2 should be applied.

Assessment; Test question
Must have:
Correct tables for a series of locations on a sample network.

4.5.8.17 Identify the appropriate documentation for different operational scenarios;

Assessment; Test question
Must have:
PTW, STT, AA, SI, SWI and SP as appropriate.

4.5.8.18 Identify that for operational and emergency switching a safety programme is not required but that the EDOR should be completed.

Assessment; Test question
Must have:
EDOR to be completed.

4.5.8.19 Demonstrate the correct procedures for making safe, for work or test, and thereafter re-instating supplies part of an HV network using switching program's and permit/sanction procedures as appropriate.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.20 Demonstrate an understanding of the correct use and positioning of safety warning signs and notices.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.8.21 Demonstrate an understanding of the use of special instructions and safety measures.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.22 Identify which other documents should be reviewed, and why, prior to the production of any work related safety documentation.

Assessment; Test question

Must have:

RA, MS and maintenance procedures for compatibility with SRP and for completeness with respect to safety.

4.5.8.23 Correctly assess the suitability of and comment on sample contractors method statements and risk assessments.

Assessment; Evening exercise

Must have:

At least two incompatibilities with SRP.

At least 2 missing procedures.

4.5.8.24 Define an area of work as hazardous or non-hazardous, identify where tables HAZ1, HAZ2, LV1, LV2 or LV3, of the SRP should be applied.

Assessment; Test question

Must have:

Correct tables for a series of locations on a sample network.

4.5.8.25 Demonstrate the correct procedures for making safe, for work or test, and thereafter re-instating supplies part of an LV network using switching program's and permit/sanction procedures as appropriate.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.26 Demonstrate an understanding of the correct use and positioning of safety warning signs and notices.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.8.27 Demonstrate an understanding of the use of special instructions and safety measures.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.28 Identify which other documents should be reviewed, and why, prior to the production of any work related safety documentation.

Assessment; Test question
Must have:
RA, MS and maintenance procedures for compatibility with SRP and for completeness with respect to safety.

4.5.8.29 Demonstrate an understanding that for non hazardous there are two possible working procedures.
Assessment; Test question
Must have: Live or dead working.

4.5.8.30 Correctly assess and comment on a method statement and risk assessment for live work.
Assessment; Evening exercise
Must have:
At least two incompatibilities with SRP.
At least 2 missing procedures.

4.5.8.31 Demonstrate an understanding of the procedure for authorising live working.
Assessment; Test question
Must have:
Authority from AE

4.5.8.32 Identify situations where live working is potentially unavoidable (as defined by the Electricity at Work Regulations 1989 and any subsequent amendments) and identify appropriate safety precautions.
Assessment; Test question
Must have:
DB fault location or Critical loads or similar
Battery installation above 120V
Unreasonable in all circumstances for work to be done dead
Reasonable in all circumstances for work to be done live
Use of PPE
Use of shrouding and barriers
Use of insulated tools

4.5.8.33 Demonstrate an understanding that all safety precautions for live working must be clearly explained to and agreed with the prospective person in charge prior to carrying out the work and that the prospective person in charge must be satisfied with the precautions.
Assessment; Test question
Must have:
All safety precautions for live working must be clearly explained to and agreed with the prospective person in charge prior to carrying out the work and that the prospective person in charge must be satisfied with the precautions.

4.5.8.34 Demonstrate an understanding that the sanction for live working will only permit live working within a clearly defined area and live working is prohibited in surrounding areas.
Assessment; Test question
Must have:
Permitted live working within a clearly defined area and live working is prohibited in surrounding areas.

4.5.8.35 Demonstrate an understanding that an accompanying safety person must be present for the duration of any live working and that they must know what steps to take in the event of an accident or dangerous occurrence.

Assessment; Test question

Must have:

Accompanying safety person must be present for the duration of any live working and that they must know what steps to take in the event of an accident or dangerous occurrence.

4.5.8.36 Demonstrate an understanding that only one AP per discipline is to be on duty for each location at any given time.

Assessment; Test question

Must have:

One AP per discipline is to be on duty for each location at any given time.

4.5.8.37 Define the recipient of a PTW, STT, SI, SWI, STWL as a skilled person and person in charge and demonstrate an understanding that a duty AP is not a person in charge until they have issued themselves with a PTW, STT, SI, SWI, STWL.

Assessment; Test question

Must have:

Recipient of a PTW, STT, SI, SWI, STWL as a skilled person who becomes the person in charge on acceptance of the safety document and that a duty AP is not a person in charge until they have issued themselves with a PTW, STT, SI, SWI, STWL.

4.5.8.38 Demonstrate an understanding that a permit/sanction must clearly and unambiguously define, as appropriate, the following:

i. name and location of AP ordering the work

ii. extent of permit to work or sanction to test - including geographical limits of safe working area.

iii. Identify any other documentation pertinent to the work.

iv. arrangements for cancellation.

v. location of all safety locks and associated keys.

vi. location of all earthing and isolation points.

vii. precautions taken to prevent any standby system (such as a diesel/alternator) being started.

viii. method of immobilising any automatic fire extinguisher system.

ix. any relationship between the permit/sanction and other safety documentation in use at the same location.

Assessment; Evening exercise and Practical

Review safety documentation as countersigning Authorised Person, see also safety documentation and scenario assessment criteria.

4.5.8.39 Demonstrate an understanding that the person in charge must either stay with the work until it is finished, or if the work has to be suspended or that person has to leave for any reason, before leaving he/she must:

i. Make the area mechanically and electrically safe.

ii. Leave a clear and precise record of the state of the work.

iii. List any precautions necessary before work can be restarted.

Assessment; Test question

Must have:

Make the area mechanically and electrically safe.
Leave a clear and precise record of the state of the work.
List any precautions necessary before work can be restarted.

4.5.8.40 Demonstrate an understanding that the prospective person in charge must be shown all safety precautions and be made aware of the limitations of the work area, prior to the issue of a PTW or STT.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.8.41 Demonstrate an understanding that any switching operation, prior to the issue of a PTW or STT, must follow a safety programme written on a controlled form and countersigned by another authorised person or authorising engineer.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.42 Identify that originals and or copies of all safety documentation, as defined in the SRP, must be retained with the ESDR.

Assessment: Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.8.43 Demonstrate an understanding that where more than one permit is required for a given task, each permit must be endorsed with a reference to the existence of the other permits and demonstrate an understanding of any procedures which must be followed as a result of the use of multiple permits.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

Must have:

A Risk Assessment indicates that it is safe to do so;
One Safety Programme is prepared which applies to all of the Permits;
All the Permits are prepared before any one is issued;
All the Permits are issued at or about the same time;
All the Persons in Charge are told of the existence of the other Permits, which are to be listed in Part 1 of each Permit;

Multiple locking devices are used, the devices having sufficient capacity to accommodate the Safety Locks required for all the Permits.

4.5.8.44 Identify sources of operational restrictions and demonstrate an understanding of their purpose.

Assessment; Test question

Must have: At least 2 sources and 1 purpose.

DE
NEDERS
Manufactures
Employer
AE
Inform of potential danger
Advise on remediation.

4.5.8.45 Demonstrate an understanding of the roles and duties of; Authorised Persons, Authorising Engineers, Skilled Persons, Persons in Charge and Accompanying Safety Person.

Assessment; Test question

Must have: Any 3 of each from SRP CR

4.5.8.46 Identify the requirement or otherwise for a STT for different operational scenarios.

Assessment; Test question

Must have: As appropriate

Identifying a cable with certainty
HV pressure test on withdrawable CB
HV pressure test on RMU
HV Cable fault location
Pressure test on cable

4.5.8.47 Correctly identify and use appropriate test equipment whilst observing ALL of the relevant safety procedures INCLUDING STT where appropriate.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.8.48 Identify appropriate testing procedure and associated safety precautions for use on both HV and LV systems.

Assessment; Test question

Must have: At least 2 of each;

Pressure testing
HV phasing
Dead phasing
Signal injection
Continuity testing
Insulation testing
Fault location
HV enclosure
STT
MS
RA
ASP

4.5.8.49 Demonstrate an understanding of appropriate methods for testing and commissioning of HV and LV electrical distribution equipment.

Assessment; Test question
Must have: At least 3 of;
Pressure testing
Continuity testing
Insulation testing
HV phasing
Dead phasing
Phase rotation
Load tests
Trip tests

4.5.8.50 Demonstrate an understanding that where HV testing is carried out on either HV or LV equipment, the test area is to be designated a HV enclosure for the duration of the test.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.8.51 Demonstrate an understanding of cable location and identification procedures including spiking.

Assessment; Practical
Applies:
Continuity testing
Insulation testing
Loss of signal method
Plans
Cable locator
Cable identifier
Spike cable
Test spike test

4.5.8.52 Demonstrate an understanding of the procedures for inhibiting standby supply systems for making them safe for work or test.

Assessment: Practical and test question
Must have:
isolating diesel alternator starter battery
isolating air starter systems
inhibiting automatic changeover of UPS systems
isolating fuel supplies
isolating electrical supplies
Interlocks
Might have:
UPS backed up by standby generator
4 pole switching
See safety documentation and scenario assessment criteria.

4.5.8.53 Demonstrate an understanding of the mode of operation of the electrical interlock Mk III or similar interlocking system and define its failsafe operation.

Assessment: Practical and/or test question
See safety documentation and scenario assessment criteria.

4.5.8.54 Demonstrate an understanding of the requirements for standby generator

earthing.

Assessment: Test question
Must have: At least 2:
Lead generator earthed
Changeover contacts
Balanced operations with identical generators
Harmonic effects
Circulating currents

4.5.8.55 Demonstrate an understanding of the different modes of operation for rotary and static based UPS systems and the procedures for making them safe for work or test.

Assessment: Practical and test question
Must have:
Passive mode
Active mode
See safety documentation and scenario assessment criteria.

4.5.8.56 Demonstrate an understanding of the modes of protection for rotary and static UPS and standby generator systems and the meaning of the operating indicators in the event of a fault.

Assessment: Practical and test question
Must have: At least 3;
Over voltage
Under voltage
Under frequency
Over frequency
Short circuit
Overload
Earth fault
See safety documentation and scenario assessment criteria.

4.5.8.57 Demonstrate an understanding of the basic maintenance requirements for rotary and static UPS and standby generator systems.

Assessment: Test question
Must have: At least 3;
Battery voltage
Battery levels
Charger status
Filters
Bearings
Load tests
Changeover
Battery condition tests

4.5.8.58 Correctly assess and comment on a method statement and risk assessment for UPS/generator maintenance work.

Assessment; Evening exercise
Must have:
At least two incompatibilities with SRP.
At least 2 missing procedures.

4.5.9. Learning outcomes: AP (electrical) LV, AP(LV) Note this course also acts as the refresher for AP(LV)

4.5.9.1 Demonstrate an understanding that compliance with the statutory regulations and MoD Electrical Safety Rules (hereafter referred to as the SRP) is mandatory.

Assessment; Test question

Must have:

JSP375 Volume 1 chapter 2 Secretary of States declaration.

Where appropriate; contractual requirement.

4.5.9.2 Demonstrate an understanding of the minimum statutory requirements for new installations before handover to MoD.

Assessment; Test question

Must have:

Maintainability
Access
Lighting
Fit for intended purpose
Documented

4.5.9.3 Demonstrate an understanding that where there are conflicting requirements between the SRP and Statutory Regulations, Statutory Regulations take priority and conflicts are to be referred to the SAA (electrical).

Assessment; Test question

Must have:

Statutory Regulations take priority
Conflicts are to be referred to the SAA (electrical)

4.5.9.4 Demonstrate an understanding of the difference between permit to work systems, safe systems of work and risk assessment.

Assessment; Test question

Must have:

Legal requirement for risk assessment.
Legal requirement for Safe System of Work which may require written risk assessment, method statement and permit system for any complex task.

4.5.9.5 Identify the need for demarcation agreements and demonstrate an understanding of their purpose.

Assessment; Practical and Test question

Must have:

Demarcation at main intakes
Allocation of operational responsibility
Switching permissions

4.5.9.6 Identify what types of procedures may be used on sites where demarcation agreements exist.

Assessment; Test question

Must have:

Isolation and earthing certificate

Switching permissions
Maintenance agreements

4.5.9.7 Demonstrate an understanding of the need to liaise with the other user(s) to ensure that they are fully aware of the work in hand and any impact their part of the system.

Assessment; Practical and Test question
Must have: Need to communicate
Potential impact of work i.e. fault level, loss of supply, voltage sags etc.
Permission for work

4.5.9.8 Identify that there may be local variations to the SRP to comply with host nation statutory regulations for overseas use.

Assessment; Test question
Must have: Local statutory regulations have precedence where they set a more onerous requirement.
SRP is minimum standard

4.5.9.9 Demonstrate an understanding that every skilled person must be assessed and that every electrical skilled person issued with a copy of the relevant Safety Rule Book.

Assessment; Test question and practical
Must have: At least 4;
Appointment by company letter
Ad hoc procedures
Need to brief on SRP
Need to brief on site specific procedures
Not all skilled persons undertaking electrical work
Need to brief non electrical skilled person on electrical danger
Personal assessment
Issue of Safety rule book

4.5.9.10 Demonstrate an understanding of the limits of the scope of the SRP to specific areas and safety aspects.

Assessment; Test question
Must have:
Where SRP does not apply
Unless energised by other means

4.5.9.11 Demonstrate an understanding why a record of all safety related information given to third parties or assessed shall be kept on file for reference.

Assessment; Test question
Must have: Demonstration of due diligence.

4.5.9.12 Demonstrate an understanding of the correct procedure for record keeping and ensuring the accuracy of the system operating records.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.13 Identify typical equipment all indoor substations and switch rooms might have available and identify which mandatory and optional posters should be displayed.

Assessment; Test question
Must have: At least 4
Emergency lighting
Fire extinguisher
Eye wash
First aid kit
Health and Safety at Work Act
Treatment of electric shock
SRP tables.

4.5.9.14 Demonstrate an understanding that switchgear and equipment forming part of an isolation and earthing arrangement must be locked off, wherever practicable, to prevent unauthorised operation.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.15 Identify the appropriate documentation for different operational scenarios.

Assessment; Test question
Must have:
PTW, STT, AA, SI, SWI, STWL and SP as appropriate.

4.5.9.16 Demonstrate an understanding why areas containing LV switchgear and switch rooms must be kept locked when left unattended.

Assessment; Test question
Must have:
Need to prevent unauthorised access
Need to prevent unauthorised operation
Safety of third parties

4.5.9.17 Define an area of work as hazardous or non-hazardous, identify where tables HAZ1, HAZ2, LV1, LV2 or LV3, of the SRP, should be applied.

Assessment; Test question
Must have:
Correct tables for a series of locations on a sample network.

4.5.9.18 Demonstrate the correct procedures for making safe, for work or test, and thereafter re-instating supplies part of an LV network using switching program's and permit/sanction procedures as appropriate.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.19 Demonstrate an understanding of the correct use and positioning of safety warning signs and notices.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.9.20 Demonstrate an understanding of the use of special instructions and safety measures.

Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.21 Identify which other documents should be reviewed, and why, prior to the production of any work related safety documentation.

Assessment; Test question

Must have:

RA, MS and maintenance procedures or compatibility with SRP and for completeness with respect to safety.

4.5.9.22 Demonstrate an understanding that for non hazardous there are two possible working procedures.

Assessment; Test question

Must have:

Live or dead working.

4.5.9.23 Correctly assess and comment on a method statement and risk assessment for live work.

Assessment; Evening exercise

Must have:

At least two incompatibilities with SRP.
At least 2 missing procedures.

4.5.9.24 Demonstrate an understanding of the procedure for authorising live working.

Assessment; Test question

Must have:

Authority from AE

4.5.9.25 Identify situations where live working is potentially unavoidable (as defined by the Electricity at Work Regulations 1989 and any subsequent amendments) and identify appropriate safety precautions.

Assessment; Test question

Must have:

DB fault location or Critical loads or similar
Battery installation above 120V
Unreasonable in all circumstances for work to be done dead
Reasonable in all circumstances for work to be done live
Use of PPE
Use of shrouding and barriers
Use of insulated tools

4.5.9.26 Demonstrate an understanding that all safety precautions for live working must be clearly explained to and agreed with the prospective person in charge prior to carrying out the work and that the prospective person in charge must be satisfied with the precautions.

Assessment; Test question

Must have:

Safety precautions for live working must be clearly explained to and agreed with the prospective person in charge prior to carrying out the work and that the prospective person in charge must be satisfied with the precautions.

4.5.9.27 Demonstrate an understanding that the sanction for live working will only permit live working within a clearly defined area and live working is prohibited in surrounding areas.

Assessment; Test question

Must have:

Sanction for live working will only permit live working within a clearly defined area and live working is prohibited in surrounding areas.

4.5.9.28 Demonstrate an understanding that an accompanying safety person must be present for the duration of any live working and that they must know what steps to take in the event of an accident or dangerous occurrence.

Assessment; Test question

Must have:

Accompanying safety person must be present for the duration of any live working and that they must know what steps to take in the event of an accident or dangerous occurrence.

4.5.9.29 Demonstrate an understanding that only one AP per discipline is to be on duty for each location at any given time.

Assessment; Test question

Must have:

Only one AP per discipline is to be on duty for each location at any given time.

4.5.9.30 Define the recipient of a PTW, STT, SI, SWI, STWL as a skilled person and person in charge and demonstrate an understanding that a duty AP is not a person in charge until they have issued themselves with a PTW, STT, SI, SWI, STWL.

Assessment; Test question

Must have:

Recipient of a PTW, STT, SI, SWI, STWL is skilled person and becomes the person in charge on acceptance of safety documentation and that a duty authorised person is not a person in charge until they have issued themselves with a PTW, STT, SI, SWI, STWL.

4.5.9.31 Demonstrate an understanding that a permit/sanction must clearly and unambiguously define, as appropriate, the following:

i. name and location of AP ordering the work

ii. extent of permit to work or sanction to test - including geographical limits of safe working area.

iii. Identify any other documentation pertinent to the work.

iv. arrangements for cancellation.

v. location of all safety locks and associated keys.

vi. location of all earthing and isolation points.

vii. precautions taken to prevent any standby system (such as a diesel/alternator) being started.

viii. method of immobilising any automatic fire extinguisher system.

ix. any relationship between the permit/sanction and other safety

documentation in use at the same location.
Assessment; Evening exercise and Practical
Review safety documentation as countersigning Authorised Person, see also safety documentation and scenario assessment criteria.

4.5.9.32 Demonstrate an understanding that the person in charge must either stay with the work until it is finished, or if the work has to be suspended or that person has to leave for any reason, before leaving he/she must:

i. Make the area mechanically and electrically safe.

ii. Leave a clear and precise record of the state of the work.

iii. List any precautions necessary before work can be restarted.
Assessment; Test question
Must have:
Make the area mechanically and electrically safe.
Leave a clear and precise record of the state of the work.
List any precautions necessary before work can be restarted.

4.5.9.33 Demonstrate an understanding that the prospective person in charge must be shown all safety precautions and be made aware of the limitations of the work area, prior to the issue of a PTW or STT.
Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.9.34 Demonstrate an understanding that any switching operation, prior to the issue of a PTW or STT, must follow a safety programme written on a controlled form and countersigned by another authorised person or authorising engineer.
Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.35 Identify that originals and or copies of all safety documentation, as defined in the SRP, must be retained with the ESDR.
Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.

4.5.9.36 Demonstrate an understanding that where more than one permit is required for a given task, each permit must be endorsed with a reference to the existence of the other permits and demonstrate an understanding of any procedures which must be followed as a result of the use of multiple permits.
Assessment; Evening exercise and Practical
See safety documentation and scenario assessment criteria.
Must have:
A Risk Assessment indicates that it is safe to do so;
One Safety Programme is prepared which applies to all of the Permits;
All the Permits are prepared before any one is issued;
All the Permits are issued at or about the same time;

All the Persons in Charge are told of the existence of the other Permits, which are to be listed in Part 1 of each Permit;
Multiple locking devices are used, the devices having sufficient capacity to accommodate the Safety Locks required for all the Permits.

4.5.9.37 Identify sources of operational restrictions and demonstrate an understanding of their purpose.

Assessment; Test question
Must have: At least 2 sources and 1 purpose.
DE
NEDERS
Manufactures
Employer
AE
Inform of potential danger
Advise on remediation.

4.5.9.38 Demonstrate an understanding of the roles and duties of; Authorised Persons, Authorising Engineers, Skilled Persons, Persons in Charge and Accompanying Safety Person.

Assessment; Test question
Must have: Any 3 of each from CR

4.5.9.39 Identify the requirement or otherwise for a STT for different operational scenarios.

Assessment; Test question
Must have:
Identifying a cable with certainty
HV pressure test
HV test for LV cable fault location
Pressure test on cable

4.5.9.40 Correctly identify and use appropriate test equipment whilst observing ALL of the relevant safety procedures INCLUDING STT where appropriate.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.9.41 Identify appropriate testing procedure and associated safety precautions for use on both HV and LV systems.

Assessment; Test question
Must have: At least 2 of each;
Pressure testing
HV phasing
Dead phasing
Signal injection
Continuity testing
Insulation testing
Fault location
HV enclosure
STT
MS
RA

ASP

4.5.9.42 Demonstrate an understanding of appropriate methods for testing and commissioning of HV and LV electrical distribution equipment.

Assessment; Test question

Must have: At least 3 of;

- Pressure testing
- Continuity testing
- Insulation testing
- HV phasing
- Dead phasing
- Phase rotation
- Load tests
- Trip tests

4.5.9.43 Demonstrate an understanding that where HV testing is carried out on either HV or LV equipment, the test area is to be designated a HV enclosure for the duration of the test.

Assessment; Evening exercise and Practical

See safety documentation and scenario assessment criteria.

4.5.9.44 Demonstrate an understanding of cable location and identification procedures including spiking.

Assessment; Practical

Applies:

- Continuity testing
- Insulation testing
- Loss of signal method
- Plans
- Cable locator
- Cable identifier
- Spike cable
- Test spike test

4.5.9.45 Demonstrate an understanding of the procedures for inhibiting standby supply systems for making them safe for work or test.

Assessment; Practical and test question

Must have:

- isolating diesel alternator starter battery
- isolating air starter systems
- inhibiting automatic changeover of UPS systems
- Isolating fuel supplies
- isolating electrical supplies
- Interlocks

Might have:

- UPS backed up by standby generator
- 4 pole switching

See safety documentation and scenario assessment criteria.

4.5.9.46 Demonstrate an understanding of the mode of operation of the electrical interlock Mk III or similar interlocking system and define its failsafe operation.

Assessment; Practical and/or test question

See safety documentation and scenario assessment criteria.

4.5.9.47 Demonstrate an understanding of the requirements for standby generator earthing.

Assessment; Test question

Must have:

- Lead generator earthed
- Changeover contacts
- Balanced operations with identical generators
- Harmonic effects
- Circulating currents

4.5.9.48 Demonstrate an understanding of the different modes of operation for rotary and static based UPS systems and the procedures for making them safe for work or test.

Assessment; Practical and test question

Must have:

- Passive mode
- Active mode
- See safety documentation and scenario assessment criteria.

4.5.9.49 Demonstrate an understanding of the modes of protection for rotary and static UPS and standby generator systems and the meaning of the operating indicators in the event of a fault.

Assessment; Practical and test question

Must have:

- Over voltage
- Under voltage
- Under frequency
- Over frequency
- Short circuit
- Overload
- Earth fault
- See safety documentation and scenario assessment criteria.

4.5.9.50 Demonstrate an understanding of the basic maintenance requirements for rotary and static UPS and standby generator systems.

Assessment; Test question

Must have:

- Battery voltage
- Battery levels
- Charger status
- Filters
- Bearings
- Load tests
- Changeover

4.5.9.51 Correctly assess and comment on a method statement and risk assessment for UPS/generator maintenance work.

Assessment; Evening exercise

Must have:

- At least two incompatibilities with SRP.
- At least 2 missing procedures.

4.5.10. Learning outcomes: AP (electrical) Airfield systems (AP(AIR))

4.5.10.1 Identify HV and LV AGL equipment and their sources of supply.

Assessment; Test question and Practical

Must have:

CCR
SCR
TMSE
CTP
Series Circuit Transformers
Voltage Transformers
Regulating Transformers
Static Switches
Light Units

See safety documentation and scenario assessment criteria.

4.5.10.2 Demonstrate switching, isolation, earthing and proving dead on AGL circuits and equipment using switching program's and permit/sanction procedures as appropriate.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.10.3 Demonstrate an understanding of AGL cable identification techniques.

Assessment; Practical and Test question

Must have:

Sequential switching and marking
See safety documentation and scenario assessment criteria.

4.5.10.4 Demonstrate an understanding of the specific electrical hazards associated with AGL primary series circuits both faulted and un-faulted.

Assessment; Test question

Must have:

Ground potentials
No short circuit protection
No protection against indirect contact
No protection against direct contact

4.5.10.5 Demonstrate an understanding of AGL fault location techniques.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.10.6 Demonstrate an understanding of the specific risks and procedures associated with airside working.

Assessment; Test question

Must have:

Noise
Aircraft/Vehicle movements
Jet wash
FOD
ATC communication
Ground potentials
FOD checks

Infectious Diseases incl. Wiel's Diseases

4.5.10.7 Correctly identify where tables AGL1 and AGL2 should be applied.

Assessment; Test question

Must have:

Correct tables for a series of locations on a sample network.

4.5.10.8 Correctly assess and comment on a method statement and risk assessment for airside work.

Assessment; Evening exercise

Must have:

At least two incompatibilities with SRP.
At least 2 missing procedures.

4.5.11. Learning outcomes: AP (electrical) Hazardous Areas (AP(HAZ))

AP(HVLV), AP(LV) and APR should contain an overview of AP(HAZ) requirements.

4.5.11.1 Demonstrate an understanding that there is a need for special precautions in hazardous areas and that live working is not permitted.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.11.2 Identify typical warning signs and notices which warn of Hazardous Areas.

Assessment; Practical

See safety documentation and scenario assessment criteria.

4.5.11.3 Demonstrate an understanding of the categories of explosive storage facilities with respect to electrical works as defined in JSP482.

Assessment; Test question

Must have:

Category A currently comprises explosives buildings in which explosives gases/vapours may be present.
Category B areas exist when the processing and handling of explosives gives rise to an explosives dust atmosphere and/or hazard created by accumulation/settling.
Category C comprises all explosives buildings in which explosives do not give rise to flammable vapour or explosive dust at normal storage temperature.
Category D comprises buildings, rooms, etc. where authorised small quantities of explosives, except HD 1.1, are stored

4.5.11.4 Demonstrate an understanding of the categories of hazardous places as defined in the Dangerous Substances and Explosive Atmosphere Regulations.

Assessment; Test question

Must have:

Zone 0

A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas,

vapour or mist is present continuously or for long periods or frequently.

Zone 1

A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.

Zone 2

A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Zone 20

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or for long periods or frequently.

Zone 21

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally.

Zone 22

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

4.5.11.5 Demonstrate an understanding of areas typically classified as hazardous.

Assessment; Test question

Must have: at least 4

Petroleum facilities
Explosives facilities
Carpenters Shops
Paint/Spray Booths
Gas Plants
Battery Rooms
Sewers
Liquid Oxygen facilities

4.5.11.6 Demonstrate an understanding of typical equipment classifications used in hazardous areas and where they might be installed:

Assessment; Test question

Must have: at least 4

Symbol	Type of Protection	Description of Type	Zones
Ex ia	INTRINSIC SAFETY	Limit energy of sparks and limit the temperature but include specified fault conditions.	0, 1, 2, 20, 21 & 22
Ex ib	INTRINSIC SAFETY	Limit energy of sparks and limit the temperature	1, 2, 21 & 22
Ex e	INCREASED SAFETY	No arcs, sparks or hot surfaces	1, 2, 21 & 22
Ex o	OIL IMMERSION	Keep the flammable gas away from any hot surfaces and ignition capable equipment	1, 2, 21 & 22
Ex m	ENCAPSULATION	Keep the flammable gas away from any hot surfaces and ignition capable equipment	1, 2, 21 & 22

Ex q	POWDER (QUARTZ/SAND) FILLED	Contain the explosion and quench flames	1, 2, 21 & 22
Ex p	PRESSURISED APPARATUS	Keep the flammable gas away from any hot surfaces and ignition capable equipment	1, 2, 21 & 22
Ex d	FLAMEPROOF	Contain the explosion and quench flames	1, 2, 21 & 22
Ex n	TYPE OF PROTECTION N Includes Ex nA Non sparking Ex nW Enclosed break Ex nL Energy limitation Ex nP Simplified pressurization Ex nR Restricted breathing	A type of protection applied to electrical apparatus such that, in normal operation, it is not capable of igniting a surrounding explosive atmosphere and a fault capable of causing ignition is not likely to occur.	2 & 22

Equipment classification are qualified by the letters G or D to indicate whether for Gas or Dust

Classification of maximum surface temperatures
for Group II electrical apparatus

Temperature class	Maximum surface temperature °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

4.5.11.7 Demonstrate an understanding of the temperature classifications for explosive storage facilities as defined in JSP482.

Assessment; Test question

Must have:

For Category A Facilities: The appropriate T Class, or 135°C whichever is the lower.
For Category B Facilities: 135°C.
For Category C Facilities: (1) 135°C. (2) Water/oil filled radiators 85°C.
For Category D Facilities: Unspecified

4.5.11.8 Demonstrate an understanding of the requirements before electrical testing can be carried out in an explosive storage area.

Assessment; Test question

Must have:

Prior approval and written permission from the Head of the Establishment, or his delegated Explosives Safety Representative.
PTW(E)
For category A, B and C buildings testing is not permitted unless the facility is “Certified Free From Explosives”.
For category D buildings testing can be carried out with the explosive present providing it is packaged.

Requirements of the SRP paragraphs 6.6 and 6.28

4.5.11.9 Demonstrate an understanding of appropriate additional qualifications for a skilled person working in a hazardous area.

Assessment; Test question

Must have:

Compex training appropriate to equipment and zone.
EX01 Preparation and installation of Ex'd, Ex'e, Ex'n and Ex'p systems.
EX02 Inspection and maintenance of Ex'd, Ex'e, Ex'n and Ex'p systems.
EX03 Preparation and installation of Ex'i systems.
EX04 Inspection and maintenance of Ex'i systems.

4.5.11.10 Demonstrate an understanding of the different safety documents and issuing authorities for hazardous areas.

Assessment; Test question

Must have:

Explosive Areas; PTW Explosive Area, issued by head of establishment explosive safety representative/hazardous area manager(Explosive Safety Liaison Officer),
CFFE, issued by head of establishment explosive safety representative/hazardous area manager(Explosive Safety Liaison Officer),written permission from the head of establishment explosive safety representative/hazardous area manager(Explosive Safety Liaison Officer), PTW/STT Electrical hazardous area.
Inflammable Area work; Written permission from hazardous area manager, PTW/STT Electrical hazardous area.
Hazardous area (PET) working, (inside fence, outside the hazardous area), Hazardous area permit (PET), PTW/STT electrical if applicable.
Hazardous area (PET) working, (inside the hazardous area without an PTW/STT electrical), Hazardous area permit (PET), Gas free certificate.
Petroleum Restricted Area Working; PTW/STT Electrical hazardous area, Hazardous Area PTW, issued by the AP PET, Restricted Area PTW, issued by the AP PET.

4.5.11.11 Demonstrate an understanding that only tools and test equipment which are certified and approved for use in the hazardous area are to be used.

Assessment; Test question and practical

Must have:

Requirement of the SRP paragraphs 6.10 to 6.14
Hazardous Area Managers approval (Explosive Safety Liaison Officer)
Intrinsically safe equipment
Non sparking tools
Special clothing
See safety documentation and scenario assessment criteria.

4.5.11.12 Demonstrate an understanding of the hazardous area manager's options with respect to the control of work within a hazardous area:

Assessment; Test question and practical

Must have:

Electrical permit to work only. (With written authority)
Permit for electrical work and permit for hazard.
Authorised person (for hazard) sets up a restricted area and assumes overall control or work or test.
See safety documentation and scenario assessment criteria.

4.5.11.13 Demonstrate an understanding of the application of hazardous area safety documentation with respect to explosives, petroleum and flammable areas.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.11.14 Demonstrate an understanding of the procedure for posting suitable warning notices before carrying out any electrical tests.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.11.15 Correctly assess and comment on a method statement and risk assessment for Hazardous area work.

Assessment; Evening exercise
Must have:
At least two incompatibilities with SRP.
At least 2 missing procedures.

4.5.11.16 Demonstrate an understanding that all protection, both electrical and hazard, must be checked for integrity before the area is restored to normal operational usage

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.11.17 Demonstrate an understanding that there is a need for special precautions in hazardous areas and that live working is not permitted.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.11.18 Demonstrate an understanding that it is preferable to make an area non-hazardous for duration of the test/work if possible.

Assessment; Practical
See safety documentation and scenario assessment criteria.

4.5.11.19 Demonstrate an understanding that all protective conductors are to be visibly inspected for integrity before any electrical tests are carried; high current tests such as earth fault loop, high current continuity and prospective short circuit tests are NOT to be carried out in hazardous areas unless appropriate precautions are in place and appropriate safety documentation has been raised.

Assessment: Practical
See safety documentation and scenario assessment criteria.

Appendix 1 - Authorised Person Electrical Courses

1. Assessment criteria

The following assessment criteria are intended to guide the development of the overall course structure and the marking of the examined elements of the course content. The general assessment criteria should be used in conjunction with the learning outcomes and assessment criteria in the main body of this document to develop the course content as well as scenarios and questions that can test the knowledge required. The guide for the safety documentation assessment should be studied carefully. This will determine the ultimate pass/fail rate for the AP (electrical) courses, as the assessment of these elements will determine whether many of the essential requirements for the completion of safety documentation have been met.

2. Overview of collective assessment criteria AP (electrical) courses

The participant has demonstrated the ability to (Scenarios, technical and procedural);

1) Sketch typical distribution systems, switching, isolation, open and earthing points.

2) Understand the effects on typical systems and equipment (switchgear, protective devices, CT's, etc) of changes in transformer ratings, adding and deleting cables, sectionalising, load increases, standby generation.

3) Understand the importance of the load and fault ratings of available equipment including switchgear, bus bars, transformers, generators, c.t.'s etc. when undertaking switching.

4) Understand the importance of the location of VT's and CT's.

5) Apply knowledge of typical protective devices and interprets their operational status in determining operating procedures for fault location and isolation and re-energising healthy plant

6) Apply knowledge of the differences in safe operating characteristics of circuit breakers, disconnectors, switch disconnectors, earthing switches etc in the application of safety programmes and operational switching.

7) Demonstrate how to make distribution equipment safe for maintenance or repair.

8) Safely undertake cable identification (distribution) and spiking procedures.

9) Apply test procedures at RMU and CB including use of test probes and understands the need to hold a register of test probes and the need for training in their inspection and repair.

10) Understand typical HV and LV earthing systems and the requirements for satisfactory earthing and bonding, can differentiate between lightning earthing, system earthing, circuit earthing, temporary earthing and bonding, and can apply this knowledge in safety procedures.

11) Understand neutral earthing arrangements for feeder pillars and main intake positions taken directly from transformer LV end boxes.

12) Demonstrate an understanding of the installation and maintenance requirements, as necessary for an AP (electrical), for UPS and standby and base load generators and how to make them safe for maintenance

13) Understand the roles and duties of the persons defined in the SRP, and describe how Authorised Persons should act in various possible situations, including cases of concurrent site works and acceptance of new works

14) Apply correctly, as defined in the SRP, locks, safety signs, etc.

15) Understand and can apply appropriate procedures for hazardous areas.

16) Assess Skilled Persons and Persons in Charge for suitability

17) Brief Skilled Persons, Persons in Charge and Accompanying Safety Persons on how to safely proceed in simulated situations

18) Carry out procedures appropriate to issuing, for LV and HV systems including systems incorporating generators and UPS's: Permits to Work and Sanctions for Test in non-hazardous and in hazardous areas, Authority for Access (electrical) and Sanctions for Work on or near Live Electrical Equipment.

19) Carry out procedures appropriate to issuing Standing Instructions for Electrical Equipment in a Non-hazardous Area, Specific Written Instructions for Particular Switching Instructions in Respect of Specific Items of High and Low Voltage Equipment, and Authorities for Access (electrical).

20) Understand and correctly apply special instruction and safety measures.

21) Understand the role of ATC in authorising airside works and the need for additional safety precautions and documentation on active airfields (AGL).

22) Understand and can apply AGL cable fault location techniques using appropriate documentation.

23) Safely undertake cable identification (AGL).

24) Demonstrate how to make AGL equipment safe for maintenance or repair.

25) Identify specific risks associated with back feeds and dual sources of supply.

26) Identify specific risks associated with primary series circuits in both un-faulted and faulted conditions (AGL).

27) Maintain typical record documents (Safety Documents Register, Switchgear Operating and Maintenance Records, Electrical Distribution Operating Records, System Diagrams) and demonstrate methods of safe keeping of documents.

28) Review contractors method statements and risk assessments for suitability.

29) Understand and apply the regulatory requirements that apply over and above

the SRP.

30) Undertake HV phasing.

31) Identify cables with certainty.

32) Demonstrate sequential switching for fault finding and carries out switching in a logical sequence.

33) That when fault switching, supplies were reinstated where possible.

3. Graded safety documentation and scenario assessment criteria

To be used as appropriate for scenario safety documentation assessment and in conjunction with the guide to the completion of, and assessment of, subjective elements of safety documentation. The desirable criteria are for examination and exercise marking purposes only and both essential and desirable requirements are subject to the training providers marking scheme.

Requirement	Essential	Desirable
General		
Where appropriate; were any consumers affected by faults listed correctly?		X
Where appropriate; were any faults isolated safely?	X	
Where appropriate; were any protection operations correctly recorded?		X
Was the EDOR filled in correctly?		X
Where appropriate; were isolation and earthing certificates requested and their receipt recorded?	X	
Where appropriate; were isolation and earthing certificates issued.	X	
Was the ESDR maintained appropriately	X	
Where appropriate; were operational restrictions complied with?	X	
Where appropriate; were points of demarcation recognised?		X
Did the countersigning Authorised Person identify errors of commission or omission in the essential requirements of reviewed safety programmes?		X
Where more than one permit or sanction was issued under a single safety programme were they correctly cross referenced?	X	
Were third parties identified and appropriately briefed?		X
Was the prospective person in charge briefed appropriately?		X
Where non approved or non standard abbreviations were used was a key provided?		X
Does the Safety Programme Diagram		
Identify the Point of Work?	X	

Requirement	Essential	Desirable
Identify all points of isolation?	X	
Identify all points of earthing?	X	
Where appropriate; were all earths appropriately secured?	X	
Identify the placement of electrical equipment warning signs and were they used appropriately?		X
Identify the placement of safety locks and padlocks/working locks and were they applied appropriately?	X	
Identify the placement of caution signs and were they used appropriately?	X	
Have the signature of the PIC?		X
Does the Safety Programme		
Have a countersignature?		X
Identify the establishment where the work/test is to be done?	X	
Identify the purpose of the proposed work/test?	X	
Identify the equipment to be made safe for the proposed work/test?	X	
Identify the location of the equipment to be worked upon or tested?	X	
Where appropriate; have any other safety procedures or documents relating to the Work\Test been referenced?	X	
Identify the details of work\test to be carried out?	X	
Identify date on which work is to be carried out?		X
Where appropriate; identify special instructions and safety measures and are they appropriate?	X	
Where appropriate; identify where an ASP is required? *Note; for the purpose of marking scenarios there is no requirement for a name to be included in the identification of the need for an ASP.*	X	
Where appropriate; identify where an HV enclosure is required?	X	
Identify location & identity of switchgear to be operated?	X	
Identify operation of switchgear	X	
Identify reason for each operation?		X
Identify items required at each operation?		X
Identify date & time of each operation		X
Identify the issue of PTW/STT	X	
Identify the issue of PIC key to safety key box to PIC?		X
Results in the safe isolation of the equipment to be worked on or tested?	X	
Results in the safe restoration of supplies?	X	

Requirement	Essential	Desirable
Include mimic diagram adjustment?		X
Include completion of Electrical Distribution Operating Record?		X
Does the PTW\STT		
Identify the establishment where the work/test is to be done?	X	
Identify safety key box number and Location?		X
Identify safety programme serial number?	X	
Have all appropriate details transferred from the safety programme to the PTW/STT?	X	
Identify the equipment to be worked upon or tested?	X	
Identify the location of the equipment to be worked upon or tested?	X	
Where appropriate; have any other safety procedures or documents relating to the work\test been referenced?	X	
Identify details of work\test to be carried out?	X	
Identify all points of isolation?	X	
Identify all points of earthing?	X	
Where appropriate; identify all removable temporary earths?	X	
Have the safety check list completed correctly ?		X
Where appropriate; has authority from the hazardous area manager or AP petroleum been recognised.	X	
Where appropriate; identify special instructions and safety measures and are they appropriate?	X	
Where appropriate; have a PIC signature accepting the special instructions & safety measures?		X
Have proving or confirming dead options selected correctly in part 2?		X
Have a PIC signature accepting the PTW/STT?		X
Have the signature of the AP?		X
Have the name of the AP/PIC?		X
Identify the employment of the AP/PIC?		X
Have the date and time of issue of the PTW/STT?		X

4. Guide to assessment of subjective elements of safety documentation

4.1. Establishment

Clearly identified

4.2. Purpose of the proposed work or test

A short concise unambiguous statement is required such as, replace obsolete switchgear, repair damaged cable or positively identify cable etc.

4.3. Equipment which the proposed sequence of operations will make safe to work on or test

The description should avoid any possibility of confusion with other items of equipment likely to be in the vicinity and for cables the description should include identification of both termination/end points.

4.4. Location of equipment

A short concise unambiguous statement is required, such as DSS B or joint positions 1 and 2 in cable trench on Excalibur Road.

4.5. Details of other safety procedures or documents that relate to the proposed work or test

Any RA or MS or maintenance procedures and associated documents relevant to the work should be referenced here including operational restrictions. The referencing should include sufficient information to identify the issuer and version of the associated documents used to control the work or test.

4.6. Details of work or test to be done

The description must clearly and concisely describe the work to be done with sufficient detail to avoid any possibility of misunderstanding. Particular care is required for items such as incoming HV switchgear maintenance where spouts on withdrawable circuit breakers may still be live.

4.7. Special instructions and/or safety measures to be included on the Permit to Work or Sanction to Test

These must be actions to be taken rather than statements that something could not be done. For instance, “unable to lock point of isolation” is not a special instruction or safety measure; what should/should not be done due to this difficulty is a special instruction or safety measure; in this instance stating that the PIC must confirm the

point of isolation is off before commencing work might be an appropriate instruction. This may also include action to be taken in the event of inclement weather, such as the erection of jointing tents in the event of rain.

Special instructions or safety measures would normally be directed the PIC but may be directed to the AP as reminders. Although care must be taken in all cases that any actions required after the issue of a PTW or STT do not require the use of safety keys.

Where multiple safety documents are to be issued under a single safety programme there will be times when the special instructions and safety measures are not universally applicable. In these circumstances this must be clearly identified on the safety programme and only the relevant special instructions and safety measures should be transferred to each subsequent safety document.

4.8. Electrical Diagram of Isolating and Earthing Arrangements

All points of isolation and earthing must be shown.

Removable temporary earths must be identified

The locations of safety locks, caution signs and electrical equipment warning signs should be shown. Where multiple locks are applied to a single item of switchgear only one label identifying that safety locks are fitted is required.

The location of working locks relevant to the work or test must be shown.

The diagram must show the system in the state at handover to the PIC.

All symbols should be clearly recognisable and consistent.

Where the possibility of confusion exists additional network elements should be shown, such as adjacent transformers or switchgear.

Diagrams should reflect the layout shown on the single line diagram with particular respect to the positions of cables and end boxes.

Where non approved abbreviations are used a key/legend must be provided.

The point(s) of work should be identified by a box or circle, formed from a hashed/dotted line or other unambiguous method.

The diagram must be signed by the PIC.

Sequence of Operations

4.9. Location and Identity of Equipment

A short concise unambiguous statement is required, such as DSS C OIL SWITCH RING TO DSS D, where the possibility of confusion exists greater detail must be included, which may include unit serial numbers or types.

4.10. Operation and Reason

What has been done and why. Terms such as, switched to off, switched to on, to begin isolation, to complete isolation, to continue isolation etc should be used here.

4.11. Items Required

What is needed to complete the operation. Terms such as, safety key box, operating handle, safety lock, ASP etc may be used here. There is no need to identify that the PIC is needed when issuing a permit or that a permit book is required. There is significant scope for subjectivity here and short, concise and to the point is the approach that should be followed.

4.12. Date and Time of Operation

On what day and when did the operation take place. Clear and consistent date and time formats should be used and sequential deviations should be noted and brought to the attention of students.

4.13. Specific points where equipment is isolated

All points of isolation must be identified and the description must include both the switchgear and location.

4.14. Specific points where equipment is earthed

All points of earthing must be identified and the description must include both the switchgear and location.

4.15. Earths which can be removed during testing

All removable temporary earths must be identified.

Safety check list

4.16. Where the work involves a cable, has it been identified with certainty?

The case of the issue of a STT for the purpose of identifying a cable with certainty is the only occasion when “No” may be selected in the check box and the document can still be issued.

5. Safety documents that are not to be used for the final exam scenarios

Requirements for subjective elements not included on a SP, PTW or STT:

5.1. Sanction to work on or near live equipment

5.1.1. Protective Equipment to be provided

It is sufficient to refer to the RA and MS where the protective equipment is being provided by the contractor, however items of equipment provided/specified by the AP/AE or by the site should be specifically identified.

5.1.2. Precautions to be taken

It is sufficient to refer to the contractors RA and MS where the precautions are specified by the contractor, however additional precautions specified by the AP/AE or by the site should be specifically identified, unless they have been incorporated into the contractors RA and MS. Where the work is not being undertaken by a contractor the spirit of the above guidance should be followed.

5.1.3. Work on or near Live Equipment Signs are displayed on;

The display of these signs is considered an essential requirement for assessment purposes.

5.2. STANDING INSTRUCTION and SPECIFIC WRITTEN INSTRUCTION

5.2.1. Location and identity of the equipment

Site wide descriptions must not be used, where there is insufficient space for all the equipment to be listed a separate equipment schedule may be used with the proviso: It must be attached to the SI, it must be a controlled document and it must be referenced on the SI.

5.2.2. Tasks or switching operations to be undertaken on the equipment specified above

These must be specifically identified and where each task or operation requires multiple actions for its completion, such as fault restoration or fault finding, a separate controlled document in the form of a MS supported by a RA must be attached to the SI and it must be referenced on the SI.

5.2.3. Circumstances under which the above tasks or switching operations are to be undertaken, and special instructions and safety measures

Circumstances must be clearly and unambiguously defined and where they involve the operation of equipment normally under the control the site AP there must be a specific requirement to notify the site AP prior to any operation being carried out.

5.3. Authority for Access

Form elements are already covered by requirements for other safety documents.

5.4. Other elements on all safety documents are considered self explanatory or are considered to require specific responses that are not subjective.

Appendix 2 - Authorised Person Electrical Courses

1. DE AP (electrical) course, electrical system criteria

The following sections identify the minimum system requirements considered suitable for AP(electrical) training.

2. HV system and equipment, minimum equipment requirements

A vertical isolating indoor circuit breaker with a removal truck and integral earthing facilities.

e.g. GEC BVP17 (VMX), South Wales D4X

A horizontal isolating circuit breaker with integral earthing facilities.

e.g. Reyrolle YMV2

A selection of at least five different ring main unit (RMUs), with at least one example of an extensible unit.

Examples should represent those typically found on the MOD estate.

e.g. Reyrolle ROKSS, Lucy FRMU, Brush Falcon and Schneider Electric (Merlin Gerin) Ring Master.

3. System configuration for practical scenarios

The equipment should be arranged to allow sufficient practical exercises to meet DE's requirements.

A minimum of a four panel incoming switchboard configured with 2 incoming supplies (2 x DNO or 1 x DNO and 1 x Generator). The minimum four panel requirement will be waived where training providers have alternative networks available fulfilling the requirements for dual supplies.

An open ring system with at least five RMUs fed from an indoor substation.

A radial circuit consisting of at least 4 RMUs fed from an indoor substation.

Facilities should be provided to allow phasing, pressure testing and spiking of cables to be carried out.

Suitable test probes should be available for testing purposes.

Power transformers with both internal and external tap changing arrangements.

Cartridge operated and hydraulic spiking guns should also be available.

An AP office complete with mimic diagram, key box and documentation cabinet must be provided.

4. HV documentation

A single line diagram of the HV system and system switchgear details must be provided.

5. LV system and equipment, minimum equipment requirements:

A selection of typical MOD estate feeder pillars should be provided. Examples must include shielded, IP2X and non IP2X types.

Earthing devices should be available for the different types.

Main LV board with at least 2 supplies and 5 items of switchgear.
Ideally several main switch and bus bar combinations should be available, with both form 1 and form 4 switch panels.

Moulded case circuit breaker and air circuit breaker type main switches should also be included.

Both manual and auto start generation plant and UPS systems must be available.

Suitable switchgear with Castell key interlocking is also required.

1 UPS Rotary or static

1 Auto start generator

6. System configuration for practical scenarios

The equipment should be organised to form a realistic distribution system that will allow all DE's practical scenarios to be completed.

7. LV documentation

A single line diagram of the LV system and system details must be provided.

8. Items of HV switchgear typical of those in use throughout the MOD

Manufacturer	Equipment Type	From
ABB	Sentinel	1994
South Wales Switchgear Ltd	Oil Circuit Breaker type C4	1955
	Oil Circuit Breaker type C4X	1968
	Oil Circuit Breaker type D4XD	1979 and 1988
	Oil Circuit Breaker Power type	1988
	Oil Switch type IF4X	1979
	HV Isolator type ID4	1955
	Ring Main Unit type Tiger	1976
Reyrolle and NEI Reyrolle	Vacuum Circuit Breaker type YMV2	1986
	Oil Switch type JSS/X1/JO (2L)	1964
	Fuse switch type JK/X3/OU (V)	1964
	Fuse switch type ROK	1982
	Ring Main Unit type ROKSS/CC	1982
Ferguson Pailin Ltd.	Oil Circuit Breaker type BVR3P	1956
GEC/Alstom/AREVA	Oil Switch type IB5	1963
	Switch Fuse type HF11	
	2L Unit type OJJ11	1961
	Circuit Breaker VISAX	2006
	Circuit Breaker VMX	1984
	Circuit Breaker BV range	1973
Schneider/Merlin Gerin	YSF6	1981

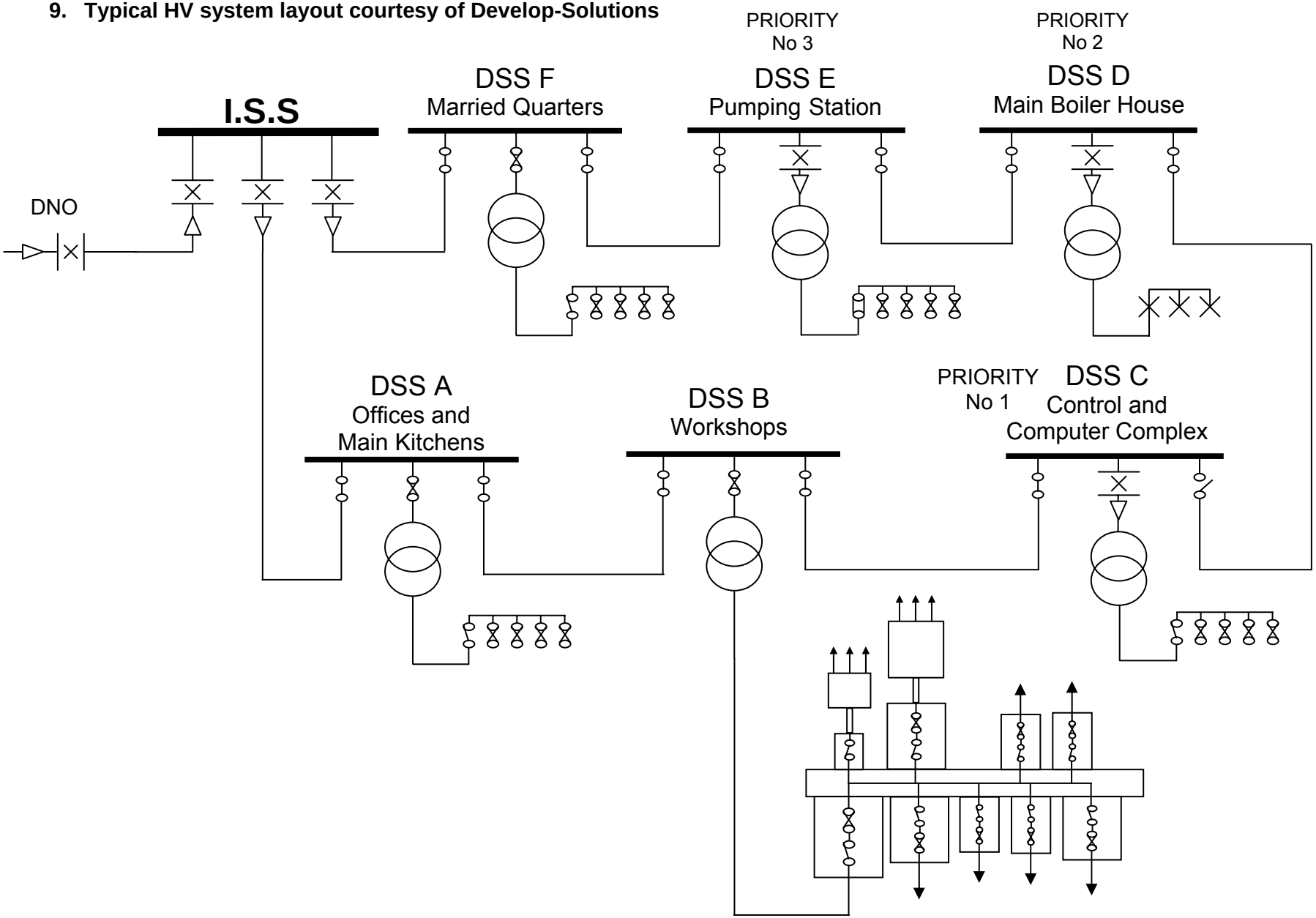
Manufacturer	Equipment Type	From
	Genie/Genie Evo circuit breaker	1990
	CN2 - non-extensible circuit breaker	1987
	SN6 - non-extensible switch	1987
	CE2 - extensible circuit breaker	1987
	CE6 - extensible circuit breaker	1987
	SE6 - extensible switch	1987
	MU2 - feeder metering unit	1987
Cutler and Hammer	W-VAC	
Whipp and Bourne	CV	
FKI Switchgear	Eclipse	
W Lucy & Co Ltd	SCRMU/SFRMU/TRMU	1986
Long and Crawford	Saturn/LCGT/RT/J series RMU's	1979

LV equipment

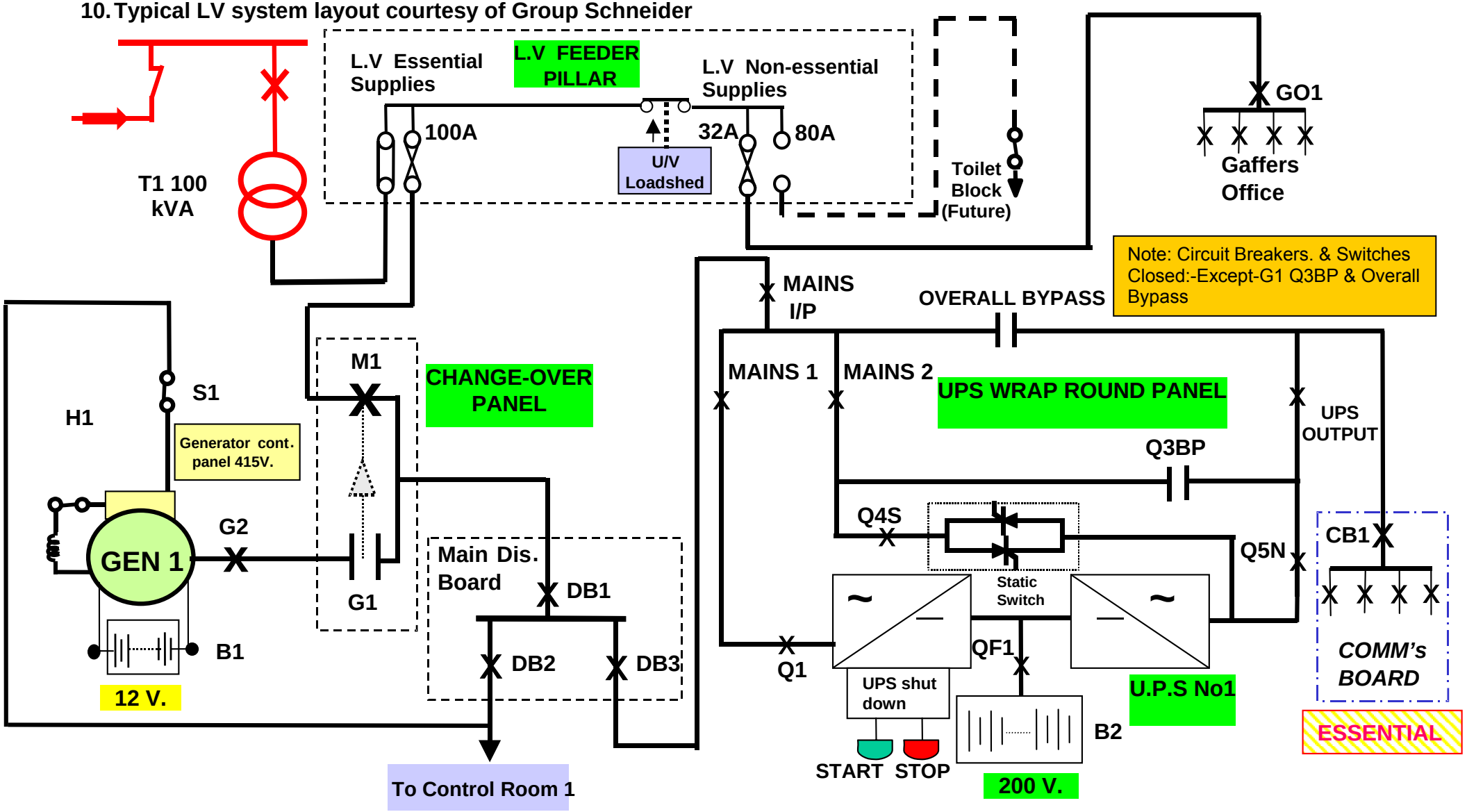
Manufacturer	Equipment type	From
Schneider/Merlin Gerin	Feeder Pillar	
Bonar Long	Feeder Pillar	1981
EMMCO	Feeder Pillar	1991
EB Nitran	Feeder Pillar	1991
Lucy	Feeder Pillar	1953
Various	UPS	

Various	LV Distribution Panel	
Various	LV Distribution Cable	-

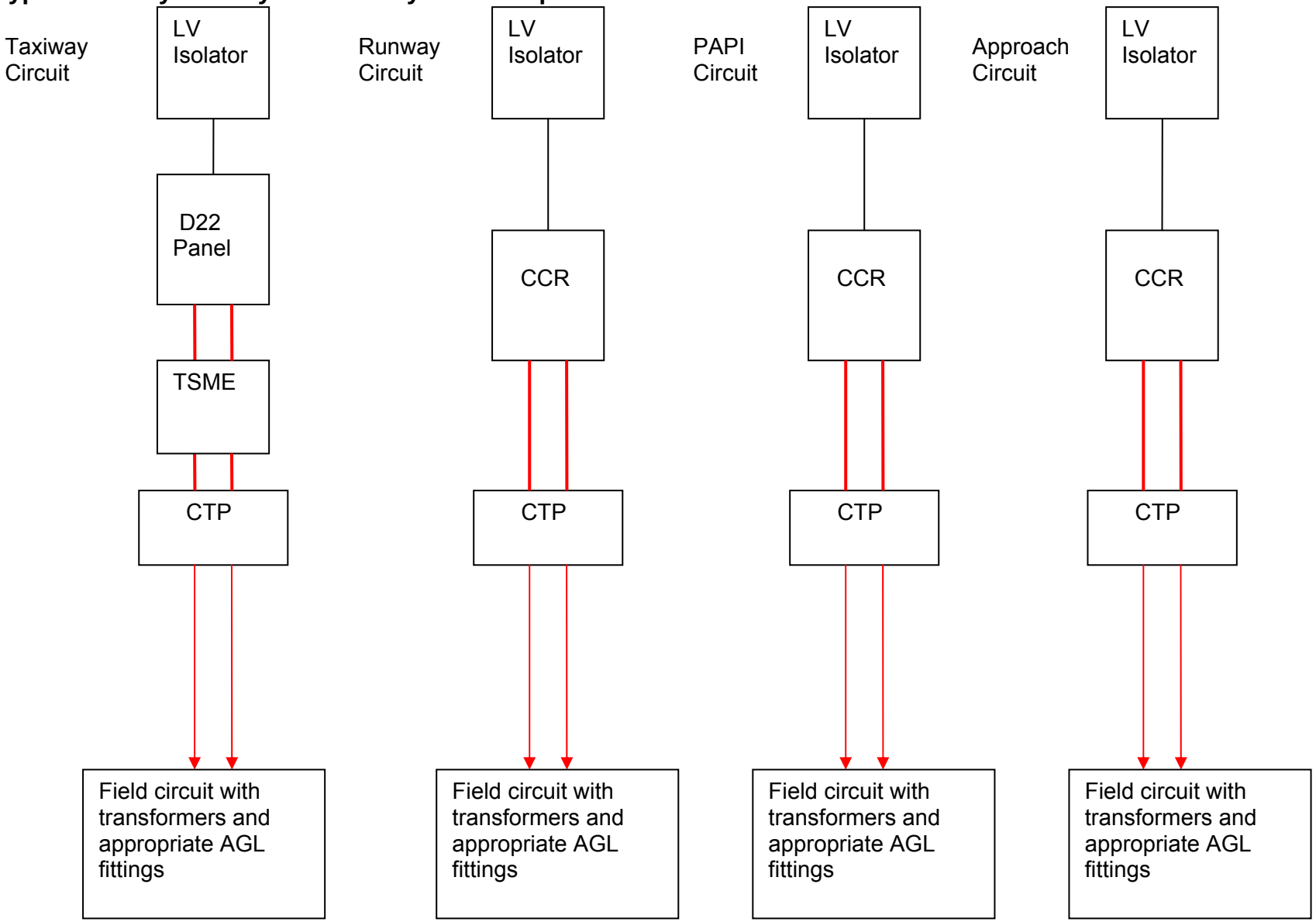
9. Typical HV system layout courtesy of Develop-Solutions



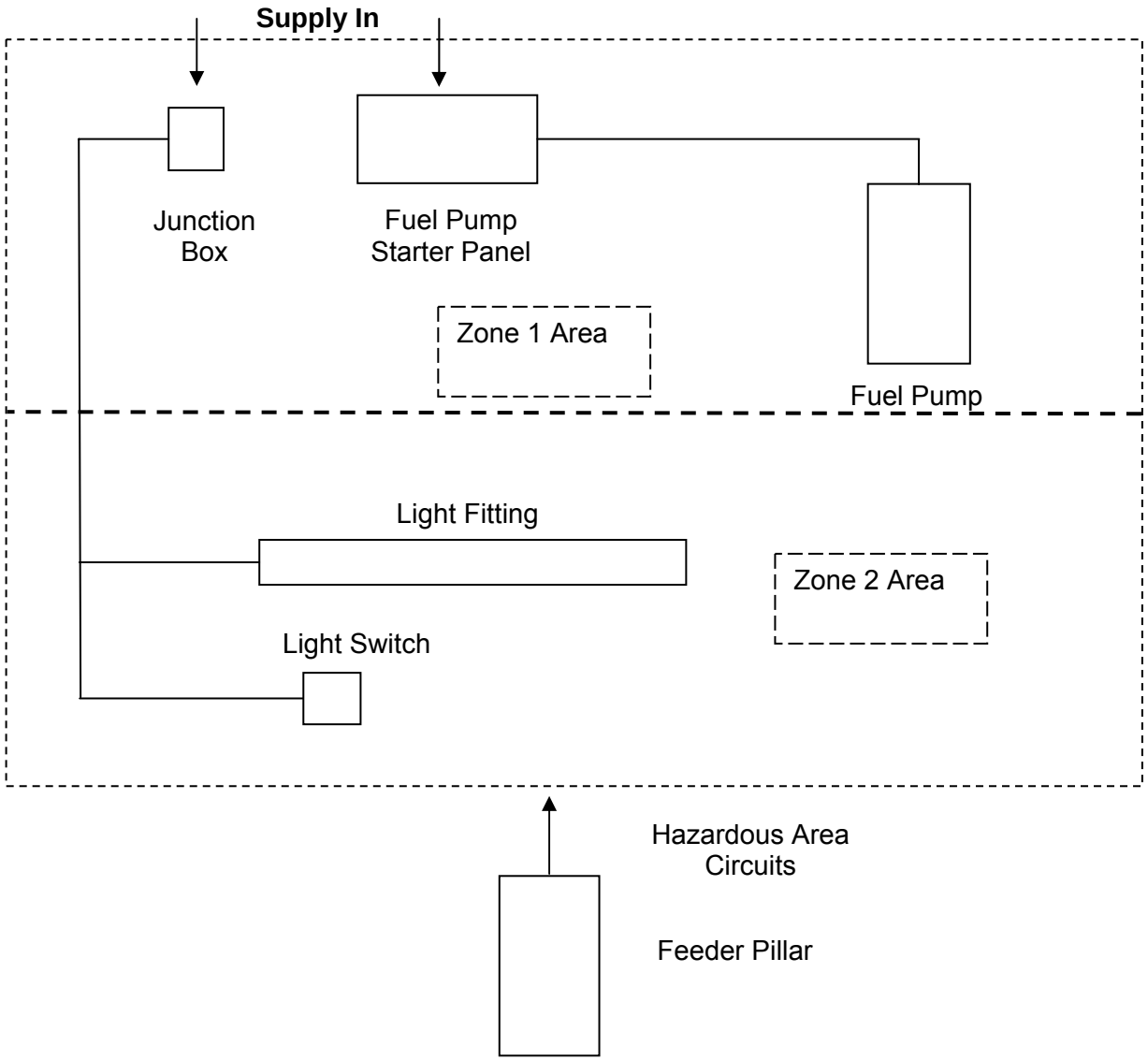
10. Typical LV system layout courtesy of Group Schneider



11. Typical AGL system layout courtesy of Develop-Solutions.



12. Typical Hazardous area system layout courtesy of Develop-Solutions.



Appendix 3 - Authorised Person Electrical Courses

1. Guidance on the technical competence of AP (electrical).

1) Prior to attending AP courses the candidates should already be able to demonstrate some, if not all, of the knowledge detailed in the technical competence check list. The list is not exhaustive but represents the upper level of discipline knowledge expected of an AP.

2) Since the level of knowledge required for a course may differ markedly from the level of knowledge required for an AP appointment, which will depend upon the complexity of the appointment site(s), the AE for a prospective AP must establish with their chosen training provider(s) the level of knowledge suitable for the training providers training network and typical scenarios.

2. Technical competence checklist

Candidate…… Site(s)…….....

This candidate posses the following competences relevant to his AP (electrical) duties;

Competence	Site Relevance (Low/Med/High)	Met ✔	Not Met ✖
1) Identify the voltage ranges for High Voltage (HV) equipment and Low Voltage (LV) equipment.			
2) Demonstrate an understanding of typical LV and HV equipment and identify their function and safety procedures appropriate to the work or test. i.e. switches, circuit breakers, distribution transformers, ring main units, cables, fused switches, switch fuses and fuses.			
3) Demonstrate an understanding of the common types of LV and HV protection and their application. i.e. IDMT, unit, differential, restricted earth fault, RCD, MCB, fuse, etc.			
4) Demonstrate an understanding of the duty cycles of different types of switchgear and demonstrate an understanding the necessary precautions associated with each duty cycle. i.e. load make, load break, fault make, fault break, dead operation.			
5) Demonstrate an understanding of the effect of fault operations on the remaining life and maintenance requirements of items of switchgear.			
6) Demonstrate an understanding of the relationship between different items of switchgear and equipment and their protection requirements.			
7) Demonstrate an understanding of diagrams illustrating typical LV and HV distribution systems including closed/open ring systems and radial systems.			
8) Demonstrate an understanding of the advantages and disadvantages of each in terms of security of supply, fault finding and load shedding.			
9) Demonstrate an understanding of the function and position of load shedding contactors and load shedding techniques.			
10) Demonstrate an understanding of the options available for earthing within feeder pillars.			
11) Demonstrate an understanding how generator and UPS standby systems can be used to improve supply reliability and safety.			
12) Demonstrate an understanding of the differences between standby systems and demonstrate an understanding of the limitations with respect to paralleling with the DNO supply, and demonstrate an understanding the procedures for connecting each type of system.			
13) Demonstrate an understanding the impacts of system configuration on protection.			

Competence	Site Relevance (Low/Med/High)	Met ✔	Not Met ✖
14) Demonstrate an understanding of different types of interlocks and their function, and demonstrate an understanding of how they operate.			
15) Demonstrate an understanding of the precautions to be taken when working on or with instrument transformers.			
16) Demonstrate an understanding of the sources of back feeds and associated risks at HV and LV and how to prevent them.			
17) Demonstrate an understanding of typical HV and LV earthing and bonding systems and their requirements			
18) Demonstrate an understanding of the importance of the fault rating of equipment and associated system fault levels			
19) Demonstrate an understanding of cable fault location and identification techniques.			
20) Demonstrate an understanding of system fault isolation procedures and the advantages and disadvantages of different procedures.			
21) Demonstrate an understanding of the implications and meaning of the statutory regulations most relevant to electrical works.			
22) Demonstrate an understanding of equipment selection criteria based on system parameters.			
23) Demonstrate an understanding of typical preventative and post fault maintenance procedures HV and LV switchgear.			
24) Demonstrate an understanding of isolation issues relating to UPS backed up by standby generators.			
25) Demonstrate an understanding of the issues associated with four pole switching of generators and UPS.			
26) Demonstrate an understanding the Risk Assessment process and methodology.			

Signed……..Authorising Engineer Date……

4.6 AP Mechanical Course

4.6.1 Amendments

Amendments	Page No	Date	Inserted by

4.6.2 **TO BE COMPLETED – See Chapter 4, Section 6.**

1.1. Student teacher ratio:

1.2. Course attendance:

1.3. Course structure:

1.4. Course duration:

1.5. Assessment and grading AP Mechanical courses:

2. Learning outcomes and assessment criteria introduction:

3. Learning outcomes: AP Mechanical courses:

4. Appendix 1 - Authorised person Mechanical Courses

5. Appendix 1 - Authorised person Mechanical Courses

6. Appendix 1 - Authorised person Mechanical Courses

4.7 AP Petroleum Course

4.7.1 **Amendments**

Amendments	Page No	Date	Inserted by

4.7.2 **TO BE COMPLETED – See Chapter 5.**

4.1. Student teacher ratio:

4.2. Course attendance:

4.3. Course structure:

4.4. Course duration:

4.5. Assessment and grading AP Petroleum courses:

5. Learning outcomes and assessment criteria introduction:

6. Learning outcomes: AP Petroleum courses:

7. Appendix 1 - Authorised person Petroleum Courses

5. Appendix 1 - Authorised person Petroleum Courses

6. Appendix 1 - Authorised person Petroleum l Courses

4.8 AP Confined Spaces Courses

4.8.1 Amendments

Amendments	Page No	Date	Inserted by

4.8.2 **TO BE COMPLETED – See Chapter 6, Section 6**

7.1. Student teacher ratio:

7.2. Course attendance:

7.3. Course structure:

7.4. Course duration:

7.5. Assessment and grading AP Confined Spaces courses:

8. Learning outcomes and assessment criteria introduction:

9. Learning outcomes: AP Confined Spaces courses:

10. Appendix 1 - Authorised person Confined Spaces Courses

5. Appendix 1 - Authorised person Confined Spaces Courses

6. Appendix 1 - Authorised person Confined Spaces Courses

4.9 AP Working at Height Courses

4.9.1 Amendments

Amendments	Page No	Date	Inserted by

4.9.2 Authorised Person - Working at Height Courses

4.9.2.1 All prospective and/or re-qualifying Authorising Engineers or Authorised Persons are required to undertake background and awareness training, to introduce them to the Ministry of Defence (MOD), Defence Estates (DE) and the ethos and management structure supporting JSP 375 Volume 3; in particular Chapter 7 of this document, which relates to the Working at Height discipline.

4.9.2.2 The purpose of this Annex is to give any existing or prospective training providers, a Course Specification to follow and to comply with; and thereby to assist them in achieving the rigorous training standards required by the DE/MOD.

4.9.2.3 Please note that in this Annex all references to an Authorising Engineer (AE) and/or an Authorised Person (AP) relate solely to the discipline of Working at Height (WaH), and may be abbreviated to either AE or AE(WaH); or AP or AP(WaH).

4.9.3 Course Specification

4.9.3.1 This training course specification describes the minimum standards expected by DE and the main learning outcomes and subject topics to be covered by training providers. The prospective training provider is to use this Specification and the ethos of this section to develop course content further, using his professional experience.

4.9.3.2 The objective of this Training Course Specification is also to facilitate specifically the development of a training course that will best achieve the education of prospective and/or re-qualifying AEs and APs, to the standards of competency required by DE/MOD.

4.9.3.3 **Competency** is defined as knowledge, skill and/or a positive attitude that enables one to perform effectively the activities of a given occupation or function to the standards expected by the employer; thus in the context of this Training Course Specification, competency requires a combination of the following Health & Safety (H&S) and WaH related subjects and skills:

a) Knowledge of procedures, systems and equipment.
b) Relevant formal qualifications.
c) Experience of procedures, systems and equipment.
d) Communication skills.
e) Familiarity - particularly with respect to Restricted High Places (RHPs) on the sites with which H&S responsibility is to be eventually entrusted to the successful prospective and/or re-qualifying AE(WaH) or AP(WaH).
f) Personal attributes - including inter alia, a positive attitude to H&S, knowing how best to judge a situation and having a high degree of wisdom to manage situations effectively and efficiently.

4.9.3.4 Items a) to f) above are all concerned with the general background of H&S policy and the requirements of the DE/MOD; particularly those contained in JSP 375 Volume 3 of which Chapter 7 relating to Working at Height is especially relevant.

4.9.4 Student teacher ratio

4.9.3.1 A ratio of 12 : 1 should not be exceeded for classroom work. Maximum of 4 to 1 for practical exercises.

4.9.4 Course attendance

4.9.4.2 Nominal maximum of 10 students per course with an absolute maximum of 12 students per course.

4.9.5 Course structure

4.9.5.1 The course shall be structured at the discretion of the training provider, provided that as a minimum, the learning outcomes and main subject topics listed in Section 3.0 are covered adequately. The training provider shall achieve a satisfactory balance between lectures, role play, exercises, seminars and various scenarios that the prospective or re-qualifying AEs and APs might meet in the field, once qualified. This is in order to engender in the student a true, broad, in-context understanding of the AE and AP roles and their responsibilities.

4.9.6 Course duration

4.9.6.1 The course duration shall be at the discretion of the training provider, however, it is not to be less than 21 hours over a 3-day period.

4.9.7 Assessment and grading AP Working at Height courses

4.9.7.1 **Assessment of students – methodology**
It is recommended that a continuous structured assessment of the performance of the students throughout the course shall be carried out by the training provider or the teacher(s) and that the methodology of the assessment shall be explained to the students at the commencement of the training course.

4.9.7.2 The purpose of the continuous structured assessment is to provide a fair and unbiased framework for the assessment of the ability of students, their understanding, knowledge, communication skills and personal attributes relating to the learning outcomes listed in Section 3.0. This structured assessment approach can also be used to aid the training provider with the development of the overall course structure, supplemented by a suitable marking system for the examinable elements of the course; including written test papers, scenarios, classroom exercises and any evening homework exercises, for example.

4.9.7.3 All marking and assessments must be completed by the training provider or teacher(s), with a brief written summary made available to students before any student is permitted to leave at the conclusion of the formal course. If necessary this will then give the teacher time to discuss the outcome of the continuous structured assessment process with the students. For example, if there is a particular problem with an individual assessment that the teacher considers could be overcome, then a course completion- or review-interview should be carried out with the student(s) concerned, on a one-to-one basis. This would be applicable if the assessment is felt by the teacher(s) to misrepresent globally the abilities of a student, or there are some extenuating circumstances to take into account.

4.9.7.4 It is recommended that the examinable assessment exercises for students should consist of the following:

a) A written test paper - of duration not less than one hour, to be completed at the conclusion of the training course. It is recommended that this should **not** be in a multiple choice format but should require proper written answers from the students.

b) An on-site scenario - to be carried out near the base of a suitable mast or tower structure. The chosen structure should be designated as equivalent to a Restricted High Place (RHP), and have several of the main features and hazards that might be associated with a typical DE/MOD mast or tower.

c) minimum of three exercises - two of which could be classroom based and the other could be set as an evening homework exercise.
The learning outcomes in Section 4.9.8 of this document should be used either singularly or in combination to develop the questions, scenarios and exercises. It is recommended that at least 75% of the learning outcomes in Section 3.0 should be covered in the written test

paper referred to in a) above. The exercises could cover amongst others:

d) Carrying out at least two practical risk assessments.

e) Writing a Standing Instruction (SI) using Form H10.

f) The practical on-site duties of an AP(WaH) - applicable when a climbing team arrive on site, including the issue of a Permit to Climb (PtoC) and filling-out the relevant 'H' forms.

g) An auditing exercise - for prospective AE(WaH) only.

h) An interview exercise - for prospective AE(WaH) only, relating to the appointment of the AP(WaH).

4.9.7.5 **Assessment of students – overall assessment standards**
The overall standard required to pass the course should be set at a normalised mark of 70%. However, if an individual course module mark is below 60%, but the overall course mark is greater than 70%, this should be investigated by the training provider or teacher(s) before failing the student. The teacher should use his experience and expertise, as pass mark attainment levels can depend on several reasons, for example the difficulty of questions in the written test paper. If necessary the contribution of a student to a discussion group, scenario or classroom work can be taken into consideration.

4.9.7.6 **Assessment of the course by Defence Estates**
For a proposed training course to gain approval, it must be considered to be fit for purpose by DE. In order to achieve this the following information as a minimum shall be submitted to DE at least six weeks prior to delivery of the initial course:

a) Details of the organisation of the training provider and its history of delivering courses, concentrating in detail on Health and Safety (H&S) related courses.

b) Details of the proposed authors of the training course, including all details of their experience of writing similar courses and any relevant, actual, first- or second-hand experience they have of the management of H&S, particularly relating to WaH or DE procedures.

c) A complete set of course notes, including all hand-outs.

d) A curriculum vitae for each teacher involved with delivery of the course.

e) Details of the course venue(s).

f) A course timetable broken down into a minimum of individual modules, lectures or periods.

g) An overall explanatory executive summary document stating how the proposed course meets with the requirements contained in this Annex.

h) Details of the continuous structured assessment (preferably a weighted marking/evaluation system) to be carried out to assess the ability of students and to 'measure' whether they have reached the required competency level to receive a pass mark and course pass certificate.
i) Any other relevant supporting information.

4.9.7.7 DE will attend the pilot course delivered by the proposed training provider as part of the course approval procedure, to carry out an initial compliance audit. Subsequent courses may also be attended by DE, however this will depend inter alia, on the findings of the initial compliance audit, also if any major course modifications are required before the next course delivery.

4.9.7.8 DE will inform the proposed training provider, within two weeks of attending the pilot course, as to whether the course delivery was satisfactory or required modification. If the delivery was unsatisfactory DE will provide a documented audit report giving feedback on where improvements are necessary. If requested by either party, a meeting shall be convened to discuss and resolve any differences of opinion over approval of the course content. If the course is approved the applicant will be informed in writing and provided with a certificate of approval, valid for a duration of 4 years, together with a copy of the audit report. If a compliance audit highlights a major problem DE retains the right to suspend, and if very serious, terminate approval of the course.

4.9.7.9 Excluding the pilot audit, which is dealt with above and following approval of the course by DE, further compliance audits will be required:

a) If a major change is proposed to the content of the course by the training provider. The approved training provider shall give DE at least 4 weeks' prior notification of any intended major course modification, together with full details of the change.

b) On a regular basis, with a maximum interval of 18 months.

4.9.8 Learning outcomes and assessment criteria Introduction

4.9.8.1 **Learning outcome** is defined as a statement of what a student is expected to know, understand and/or be able to do at the end of a training course. This is to confirm that he will be able to apply this knowledge and understanding in his normal working environment, following completion of the training course.

4.9.8.2 **Assessment criteria** are defined as statements, which enable judgements to be made about the achievement of a learning outcome or outcomes.

4.9.8.3 The learning outcomes and assessment criteria detailed in the following sections identify the minimum level of technical and procedural knowledge that are intended to be delivered by the respective courses. This should be used to develop course content, test questions and scenarios and will form the basis for the DE course content assessment, during the course approval procedure.

4.9.9 Learning outcomes: AP (Working at Height)

4.9.9.1 At the commencement of the course the training provider or teacher(s) shall give a general course introduction and background to students, to set it into

context. This should include as a minimum, the course objectives and how the performance of students will be assessed.

4.9.9.2 At the end of the training course students are expected to understand, have in-depth knowledge of and demonstrate the following, as a minimum; to a level of competency in accordance with the standards stated in this document. During the training course the training provider is expected to educate students so that they are able to:

a) Demonstrate an in-depth understanding and knowledge of current workplace Health, Safety and Welfare legal requirements, particularly with respect to the WaH discipline and know whether primary or delegated responsibilities are applicable. This should also include knowledge of an historical perspective of this subject.

b) Demonstrate an in-depth understanding and knowledge of The Health and Safety at Work etc Act 1974; together with an understanding of how it fits into the British criminal law system, and the duties and responsibilities required to be performed by employers, employees and also relevant to the WaH discipline.

c) Demonstrate an in-depth understanding and knowledge of all important H&S legislation and procedures particularly relevant to the WaH discipline, including inter alia:

i) The Confined Spaces Regulations 1997.
ii) Construction (Design and Management) Regulations 2007.
iii) Personal Protective Equipment at Work Regulations 1992.
iv) Provision and Use of Work Equipment Regulations 1998.
v) Manual Handling Operations Regulations 1992.
vi) Workplace (Health and Safety and Welfare) Regulations 1992.
vii) Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995.
viii) Health and Safety (First Aid) Regulations 1981.
ix) Health and Safety (Safety Signs and Signals) Regulations 1996.
x) Control of Substances Hazardous to Health Regulations 2002.
xi) Chemicals (Hazard Information and Packaging for Supply) Regulations 2000.
xii) Lifting Operations and Lifting Equipment Regulations 1998.
xiii) The Management of Health and Safety at Work Regulations 1999.
xiv) Control of Noise at Work Regulations 2005.

4.9.9.3 Demonstrate an in-depth understanding and knowledge of:

a) How H&S legislation is enforced.

b) The levels of duty within H&S legislation, being able to explain the terms ‘an absolute duty’, ‘as far as is practicable’ and ‘as far as is reasonably practicable’.

c) The potential implications of breaches of H&S legislation.

4.9.9.4 Demonstrate an in-depth understanding and knowledge of The Work at Height Regulations 2005 (as amended).

4.9.9.5 **Demonstrate a very detailed understanding and knowledge of JSP 375, Volume 3, Chapter 7; generally known as the Safety Rules and Procedures for Working at Height on Restricted High Places (SRP(WaH)) and how it should be best applied in practice.**

NOTE. Of all the learning outcomes, listed in Section 3.0, the above one is considered to be the most important and significant one. Because of this, some of the learning outcomes listed below are based on clauses within the Chapter 7. In other words this learning outcome is effectively a *global* one, which will overlap and compliment other outcomes in this Section.

4.9.9.3 Demonstrate an in-depth understanding of:

a) The definition of Working at Height.

b) The definition of a Restricted High Place (RHP). The student should be able to identify RHPs from examples and justify why they are considered to be, or not to be RHPs.

c) The types of structures on the MOD estate that would constitute RHPs. The student should from examples be able to recognise and distinguish between RHPS and non-RHPs.

4.9.9.4 Demonstrate an understanding and knowledge of JSP 375, Volume 3, Chapter 2; generally known as the Common Requirements and how best they should be applied in practice.

4.9.9.5 Demonstrate an understanding of the principle of the 4 'C's that is **C**o-operation, **C**ommunication, **C**o-ordination and **C**ontrol; (Note: Control is taken to include Competence).

4.9.9.6 Demonstrate an in-depth understanding and knowledge of the limitations to the usage and application of the Chapter 7 and an understanding of how JSP 375 Volume 2 Leaflet 7 may apply, where staging and access equipment, portable ladders or mobile elevated working platforms are to be used, for example.

4.9.9.7 Demonstrate an understanding of the purpose of a Standing Instruction (SI), as per Chapter 7. The student should be required to write an example SI as a scenario exercise using the new H10 form.

4.9.9.8 Demonstrate an understanding of how to manage fire escapes, RHPs used by third parties and training facilities which may have dual usage both within and outside the Chapter 7.

4.9.9.9 Demonstrate an understanding of:

a) The management system and hierarchy described within Chapter 7.

b) The AE and AE roles in particular within the management system including their duties and responsibilities.

4.9.9.10 Demonstrate an understanding of the Permits to Climb (PtoC) issuing process. The student should be required to write an example PtoC as a

scenario exercise and also should be given an example of a filled out PtoC form to make critical comments.

4.9.9.11 Demonstrate an understanding of the control hierarchy for work at height as suggested by the Work at Height Regulations 2005 (as amended).

4.9.9.12 Demonstrate an in-depth understanding and knowledge of the detail of DE procedures and requirements for managing wind sensitive structures (i.e. a tower or mast) plus other buildings such as hangars and roof tops where RHPs may be present. This should include the system of 'H' and 'R' forms, as covered in the Chapter 7 and DE Practitioner Guides 09/08 and 10/08. The student should be given examples of 'H' and 'R' forms to make critical comments.

4.9.9.13 Demonstrate an understanding of the design, appraisal, inspection and maintenance of RHPs, including the use and application of current codes, standards, technical bulletins including those referenced in Chapter 7.

4.9.9.14 Identify typical safety signs and notices which warn of hazardous areas, including the signage requirements for RHPs.

4.9.9.15 Demonstrate an understanding and knowledge of the roles, duties and responsibilities of the safety management and supervisory team described within the Chapter 7. The safety management team consists of the PAA, SAA(WaH), CAE, AE(WaH), CAP(WaH), AP(WAH) and the PiC.

4.9.9.16 Demonstrate a detailed understanding of the complete duties, responsibilities and the suitability criteria for the AE, AP (and CAP) roles. This learning outcome will be very important to the prospective and re-qualifying AEs and APs attending this course.

4.9.9.17 Demonstrate an in-depth understanding and knowledge of Chapter 7 and RHP related documentation and its control; including what documentation is required, and how and where it is best stored. This should include the purpose and usage of the Document Register.

4.9.9.18 Demonstrate an understanding of the use and control of safety keys, access keys and key boxes particularly relating to the anti-climb devices of RHPs.

4.9.9.19 Demonstrate an in-depth understanding and knowledge of the use of Permits to Climb (PtoC) to control access to an RHP where work at height is to be carried out. This should include:

a) Routine and Non-Routine Work, their definitions and the difference in the procedures between the two.

b) The practical details of the PtoC procedure including issuing and closing a PtoC, and management of the procedure/process.

c) Climbing team logbook inspection, physical fitness-to-climb evidence (Form H9), adequacy and sufficiency of the task; on-the-day pre-climb, risk assessments, method statements, the emergency & rescue plan, and anti-climb and/or access key control.

d) Reference should be made to learning outcome 4.9.8 where the student is required to write an example PtoC as a scenario exercise and also is given an example filled out PtoC form to make critical comments.

4.9.9.20 Demonstrate an understanding of the contents of DE Technical Bulletin 00/06 which covers;

a) Fixed access ladder systems; ladders Types 1, 2 and 3.
b) The main types of fall arrest systems found on RHPs.
c) The main types of platforms found on RHPs.

4.9.9.21 Demonstrate an understanding and knowledge of the various types of structures found on the MOD estate where working at height might be an issue. In particular this includes 'wind sensitive' structures such as guyed masts, lattice towers, monopoles, guyed poles and water towers; together with the various access systems that might be installed on them. This should also include some Engineering understanding of how these structures and their foundations are designed, the types of loads and load paths involved etc. This section should also cover an understanding of access platforms, anti-climb systems, fall arrest systems and the current thinking with respect to ladder hoops etc.

4.9.9.22 Demonstrate some knowledge of the types of broadcast and receive antennas and equipment that can be found on a wind sensitive structure; together with their RF characteristics.

4.9.9.23 Demonstrate an understanding and knowledge of the standard nomenclature for the referencing of key elements of mast and tower structures as contained in Technical Bulletin 00/16. Note that this subject is mainly applicable for the prospective AE(WaH); however some knowledge of TB 00/16 may also be useful for the prospective AP(WaH).

4.9.9.24 Demonstrate an understanding and knowledge of the latest thinking and policy with respect to ladder hoops and the various types of anti-climb devices.

4.9.9.25 Demonstrate an understanding and knowledge of DE's Policy Instructions relevant to Working at Height.

4.9.9.26 Demonstrate an understanding of the responsibilities and duties to be undertaken by the climbing team, Authorised Climbers (ACs) within the climbing team and the Person in Charge (PiC); together with their required competences. This should include an understanding of:-

a) The selection of Authorised Climbers to create a balanced climbing team that would be appropriate for the task to be performed.
b) The selection of a PiC and his particular duties.

4.9.9.27 Demonstrate an understanding and working knowledge of the preparation of task and on-the-day risk assessments, method statements, and emergency and rescue plans. The student should either be given examples of these to make critical comments, or could be asked to prepare examples based upon a scenario exercise.

4.9.9.28 Demonstrate an understanding of the use and purpose of a Serious Fault Notice (Form H8).

4.9.9.29 Demonstrate an understanding and knowledge of the three categories of Authorised Climber and the differences in their competency requirements and constraints applied to each category.

4.9.9.30 Demonstrate an understanding and knowledge of the general safe working practices that a climber would use whilst carrying out a task at height.

4.9.9.31 Demonstrate an understanding and knowledge of the medical and fitness to climb requirements that an AC must satisfy before commencing a climb. This should include knowledge of the Self-Certified Fitness Questionnaire (Form H9) which must be filled in by each climber on a daily basis before commencing a climb.

4.9.9.32 Demonstrate an understanding and knowledge of the training requirements for all 'Skilled' and 'Advanced' category climbers. This should include an understanding of the following which apply to the climber:

a) His knowledge of H&S legislation.
b) His aptitude for working at height.
c) Climbing and access techniques.
d) The selection and use of work equipment and WaH Personal Protective Equipment (PPE).
e) Inspection of work equipment and WAH PPE.
f) Potential hazards.
g) Preparation of risk assessments.
h) Planning for emergencies and rescues.
i) The use of a Logbook for record keeping and the minimum information it should contain.
j) First aid training to an appropriate standard
k) Structure rescue training to an appropriate standard using suitable equipment that the climbing team may deploy.
l) RF monitoring.
m) Roof top training if applicable.
n) Training in the use of any particular tools and plant, for example lifting equipment.

4.9.9.33 Demonstrate an understanding and knowledge of Fall Protective Equipment (FPE) and PPE. This should include an understanding of the following:-

a) How suitable and correct work equipment is selected by task risk assessment.
b) The various compliance standards for PPE.
c) Appropriate inspection and maintenance regimes for PPE.

The above should apply to, amongst others, head protection, body harnesses, eye protection, footwear; gloves and weather protective wear, for example wind and waterproof overalls and coveralls.

4.9.9.34 Demonstrate an understanding and knowledge of the correct use of FPE and PPE. This should include an understanding of the following including their individual components:

a) Work restraint systems.
b) Fall arrest systems.
c) Work positioning systems and devices.
d) Rescue equipment including emergency decent systems.

4.9.9.35 Demonstrate an understanding and general knowledge of how and why risk assessments are carried out and the repercussions that can result from their findings, particularly in the production of method statements. The student should be required to produce several example risk assessments as scenario exercises. This should include an understanding of the following:

a) The requirements for a risk assessment; including reference to JSP 375 Volume 2 Leaflet 39 'Risk Assessment Guidance Notes'.
b) Hazard identification including the different types of hazards that a climber might come across. This should include amongst others some knowledge and the implications of:-

- Radio Frequency (RF) and microwave radiation.
- Various environmental and weather conditions.
- The various type of work tasks to be performed at height.

c) Assessing the likelihood of harm and/or severity of injury.
d) Possible control measures to be considered to reduce the risks to an acceptable level.

4.9.9.36 Demonstrate an in-depth understanding and knowledge of the specific requirements to be taken into account specifically for a *Working at Height* task risk assessment. This should take into account the following as a minimum:

a) The RHP datasheet (Form H2).
b) Residual hazards on the RHP (Form H3).
c) The register of equipment (Form H4).
d) The record of individual equipment (Form H5).
e) The on-the-day risk assessment shall also be considered, taking into account the following as a minimum:

- Environmental conditions.
- Climber medical fitness.
- Any changes that could/are about to occur to the agreed method statement that are significant with respect to WaH safety.

4.9.9.37 Demonstrate an in-depth understanding, knowledge and some experience of the hazards likely to be encountered on/at an RHP and the equipment, skills and techniques required to carry out a typical broad range of WaH tasks.

4.9.9.38 Demonstrate an in-depth understanding and knowledge of the purpose of emergency and rescue plans, what they should contain and who is responsible for producing them including, for example:

a) A method statement of how an emergency at height is to be dealt with, including ensuring that Authorised Climbers have the correct competences, knowledge and training.
b) Procedures to adopt during an emergency, including raising the alarm, liaising with the emergency services, effective communication, having

suitable rescue equipment available, measures to safeguard rescuers and the recovery of the casualty.

c) Procedures for first aid including those associated with orthostatic intolerance (formerly known as suspension trauma).

4.9.9.39 Demonstrate a knowledge of the AE(WaH) suitability criteria.

4.9.9.40 Demonstrate a knowledge of the appointment and re-appointment procedures for an AE(WaH).

4.9.9.41 Demonstrate a knowledge of the AP(WaH) suitability criteria.

4.9.9.42 Demonstrate a knowledge of the appointment and re-appointment procedures for an AP(WaH), including the issue of a Certificate of Appointment. This should also include knowledge of interview techniques and procedures for the AE(WaH) to use when interviewing a prospective AP(WaH).

4.9.9.43 Demonstrate a knowledge of the suspension or termination of AE(WaH) and AP(WaH) appointments.

4.9.9.44 Demonstrate a knowledge of the appointment and re-appointment procedures for a Co-ordinating Authorised Person (CAP(WaH)).

4.9.9.45 Demonstrate an understanding and knowledge of interview procedures and techniques to be used by the AE(WaH) when assessing a prospective AP(WaH) for competency. This should include the following as a minimum:

a) Understanding the purpose of the interview.
b) Pre-interview preparation required by the interviewer and the prospective AP(WaH).
c) Arranging suitable logistic arrangements for the interview.
d) Effective structuring of the interview to include an introduction, covering the candidates knowledge, training record, qualifications, experience, skills, familiarity with particular RHPs, possibly an on-site exercise site; and interview conclusion and feedback session.
e) Structured evaluation techniques for evaluation of a candidates interview performance score.

4.9.9.46 Demonstrate an understanding and knowledge of the auditing, review and monitoring requirements within JSP 375 Volume 3 Chapter 2, the Common Requirements, and Chapter 7 the SRP(WaH); in particular the AE(WaH) is required to audit the WaH system, under the control of each AP(WaH) on a regular basis to the recommended timescales as confirmed by the Co-ordinating Authorising Engineer (CAE).

4.9.9.47 Demonstrate an understanding and knowledge of auditing procedures and techniques to be used by the AE(WaH) when carrying out the audits referred to in 3.1.50 above.

4.9.9.48 Demonstrate an understanding and knowledge of the auditing interview pro-forma. The layout and structure of this document, gives a clear format for covering the most important and main areas of the whole WaH-system, that need to be audited. The pro-forma includes reference to the following topics as a minimum:

a) An action plan from previous audits if applicable.
b) A matrix of basic background information relating to the AP(WaH)'s training and sites he is responsible for.
c) The training record, resources/relevant workload, technical knowledge, competency and site and equipment familiarity of APs.
d) The CAP duties carried out by the AP.
e) Full records kept by the AP of the following: risk assessments, safety documentation, operating records, document registers, safety alerts, guidance notes and operational restrictions, dangerous incidents, dangerous conditions, dangerous practices, dangerous occurrences, injuries and diseases.
f) Information on the location and type of document cabinets, keys and key cabinets, PPE, safety and test equipment; together with records of systems installed and any SIs.
g) Inspection and maintenance records for RHPs, together with information on any planned new works.
h) An action plan giving the outcome of the audit.

4.9.9.49 Demonstrate an understanding and knowledge of how to write an audit report.

Note. Audits are carried out by AEs; thus this section is for information only for APs.

4.9.9.50 Demonstrate an understanding and knowledge of compliance monitoring to be carried out by the Coordinating Authorised Person for Working at Height (CAP(WaH)) and by the AP(WaH). This should include the following as minimum:
a) Monitoring climbing teams and their Authorised Climbers when they are on site; and including the safety policy of their parent Companies.
b) Inspections of RHPs and relevant safety equipment and systems.
c) Formally recording in writing or electronically any relevant site safety observations in a diary or equivalent, with particular reference to any safety incidents, problems or issues.

4.9.9.51 Demonstrate an understanding and knowledge of compliance monitoring to be carried out by the AE(WaH). This should include some on-the-spot checks, using the experience of the AE; in a less formal way than the periodic audits referred to in Sections 3.1.50 to 3.1.53.

4.9.9.52 Demonstrate a detailed understanding and knowledge of JSP 375 Volume 2 Leaflet 7 entitled Working at Height. This should include knowledge of alternative safe systems for Working at Height that are not covered in full detail within JSP 375 including, for example:

a) The safe use of temporary ladders.
b) The safe use of cherry pickers and Mobile Elevating Work Platforms (MEWPs) etc.
c) The safe use of rope access systems.
d) The safe use of scaffolding.
e) The safe use of staging/scaffold towers and similar access equipment.
f) The use of other safety equipment such as safety nets or air bags etc.
g) Steeple-jacking techniques.
h) The safe use of specialist roof working equipment and systems.

i) Building or structure design modifications to eliminate WaH hazards. This could involve organising a full design risk assessment or review of the RHP in question.

Appendix 1 - Authorised Person Working at Height Courses

1. Assessment Criteria

The assessment criteria provided in Section 1.5.1 of this document are intended to guide the development of the overall course structure and the marking of the examined elements of the course content. The general assessment criteria should be used in conjunction the learning outcomes in Section 3.0 to develop the course content as well as scenarios, questions and exercises that can test the knowledge and understanding required.

2. Guidance on Technical Competence

Prior to attending the training course described in this Annex 5, it is strongly advised that prospective and/or re-qualifying AEs and APs meet with the basic suitability criteria that will **not** be covered on the actual training course. The basic suitability criteria can be found in JSP 375 Volume 3 Chapter 2 the Common Requirements Sections 7.7.3 & 7.8.3, and in the Chapter 7 Sections 4.2.3 & 4.3.4. For convenience all suitability criteria are listed in the following Section C2.

3. Technical Competence Checklist

Authorising Engineer suitability criteria

From the Common Requirements:

a) Either to:
   i) Be, as a minimum, registered as an Incorporated Engineer in an appropriate discipline or;
   ii) Be working towards IEng registration or;
   iii) Have suitable and sufficient professional experience as determined by the SAA.
b) Have successfully completed and passed a suitable training course appropriate to AEs and APs as detailed in JSP 375 Volume 3 Chapter 8.
c) Be familiar with the different types of equipment, systems and locations for their area(s) of appointment on the MOD Estate.
d) Be an employee of the Maintenance Management Organisation (MMO), an MOD employee, or a member of the armed forces.
e) Be able to confirm their competency and suitability for the role by demonstrating an appropriate understanding of the tasks involved and knowledge of JSP 375 Volume 3 for each of their nominated disciplines.

Additional criteria taken from the Chapter 7:

f) As a minimum, hold an HNC/HND qualification, or equivalent, in a relevant engineering subject (i.e. civil or structural engineering).
g) Have relevant technical experience.
h) Be familiar with different types of structures, installations and access systems in use on the MOD estate.
i) Be competent in the preparation of risk assessments for working at height.
j) Be competent in conducting interviews and assessments of personnel.
k) Be competent in conducting audits.

Authorised Person suitability criteria

From the Common Requirements:
To be eligible for appointment, prospective APs are to:

a) Be an employee of the MMO, be directly contracted to the MMO, an MOD employee, or a member of the armed forces.
b) Have an adequate knowledge of JSP 375 Volume 3, any agreed local variations, and of those Regulations which are applicable to the equipment, systems or locations for which they are to be appointed.
c) Be able to demonstrate through formal assessment by the AE their competency to be able to safely operate and make safe to work on or in, the equipment, systems or locations for which appointment is sought; together with their knowledge of JSP 375 Volume 3.
d) Have successfully completed and passed the appropriate tuition, training and familiarity with their future equipment and systems as detailed in JSP 375 Volume 3 Chapter 8.
e) Have attained an appropriate level of fire precaution and first aid training commensurate with their appointment.

Additional criteria taken from the Chapter 7:

f) Be familiar with each RHP for which he is appointed.
g) Be familiar with the establishment and its user requirements with respect to RHPs.
h) Have awareness of current climbing practices, climbing equipment and WaH PPE.

4.10 Authorising Engineer Course

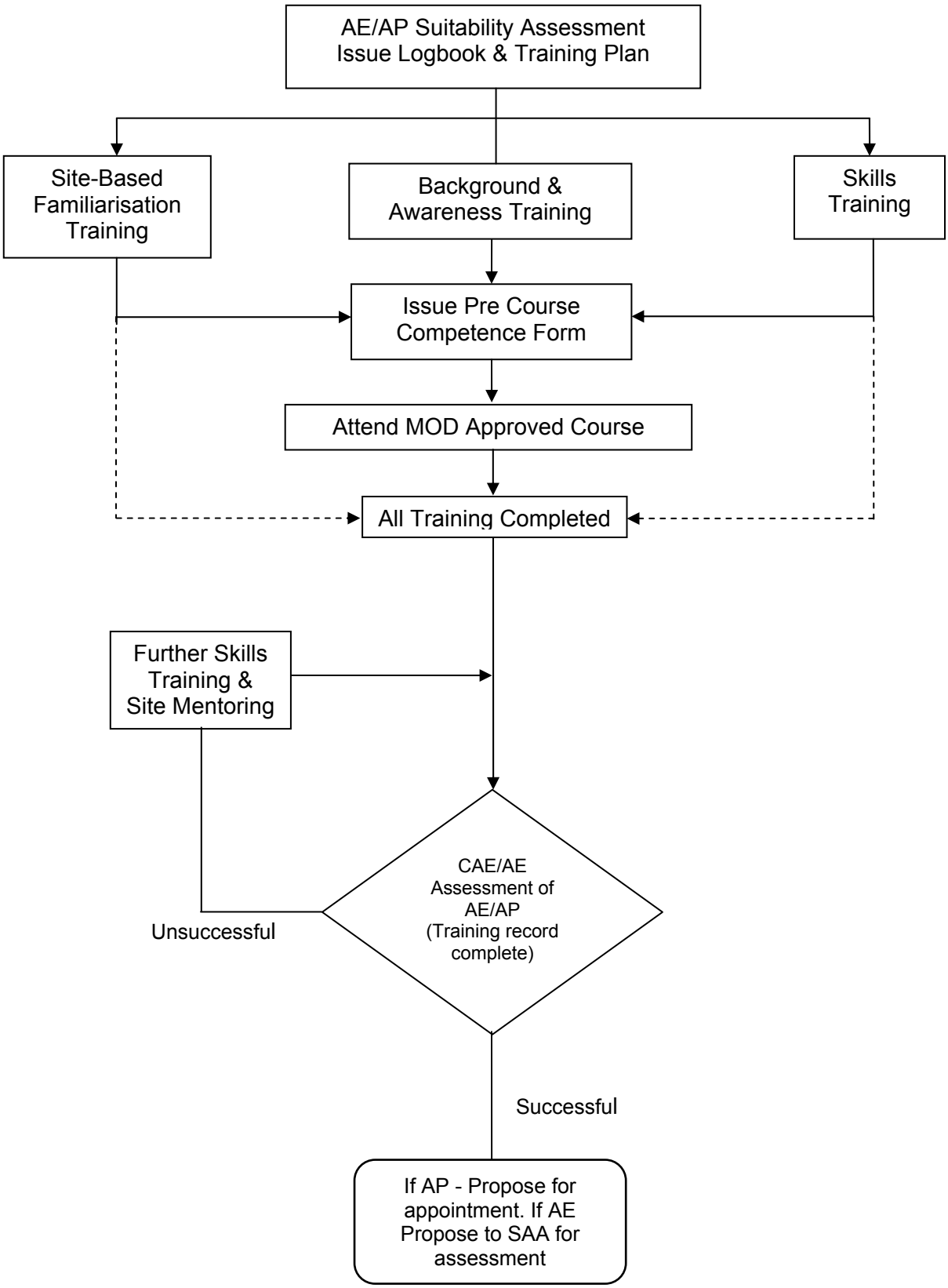
4.10.1 Amendments

Amendments	Page No	Date	Inserted by

4.10.2

Annexe A

Authorising Engineer/Authorised Person Training Process



Annexe B

Logbooks

1.0 Guidelines for Building up an Authorising Engineer or Authorised Person Logbook

1.1 Typically, the Logbook will comprise a single A4 size ring binder.

1.2 A Section Contents page should be inserted as the first section of the Logbook. It should list applicable sections as appropriate to the specialisms for which appointments are held.

1.3 A numbered section divider should be inserted for each specialism.

1.4 At the front of the Logbook – a review sheet for signing off by CAE/AE/SAA.

1.5 Each numbered section should contain a separate alphabetical contents list of the headings:

Section	***Heading***	***Comments***
a	Career Resume	To be updated as appropriate (No personal details to be included).
b	Technical Qualifications	Include copies of relevant technical qualifications and membership Certificates of professional bodies.
c	Training Certificates	Include all training certificates applicable to appointment
d	On-site familiarity training	Include: • Copy of the familiarity training undertaken. • Copy of relevant forms contained within this procedure. • Copies of records produced during this process countersigned by the training Authorised Person.
e	SAA/CAE/AE Training and Assessment Plan	Include: • Training Plan • Test Exercise completed etc
f	Appointment Certificates & Letters	Include: • Certificate of Competence /Certificate of Appointment • AE/AP Letter of Appointment.
g	Diary	Simple diary record sheets to record relevant day to day activities.
h	Competency Records	File copies of competency assessments records.
i	Safety Documentation	Retain copies of sample safety Documentation.
j	Miscellaneous	Add any further details considered relevant.

Annexe C

Pre - Course Competence Form

Pre - Course Competence Form

I confirm the candidate* …..…… (name).

	Tick box
Has attained appropriate technical training	☐
Has sufficient equipment and system knowledge	☐
Has sufficient knowledge and background awareness	☐
Has knowledge of AE/AP* roles and duties	☐
Has been issued with an AE/AP* Logbook	☐
Has a current medical certificate (*where appropriate*)	☐

Name: …….. Signed: ……..CAE/AE

for ……. company.

Date: ……..

* Delete as appropriate

Completed Form will be collected by the training provider on the first day of the course.

……

Annexe D JSP 375 Vol 3 Mandated Training Requirements

Role	Specialism	Training Courses
Authorising Engineer	Electricity	For a new prospective AE(E) – • Background and Awareness Training MOD - Approved (MA) • Authorising Engineer course (MA) • CAE to assess the need for the AE(E) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Electrical (MA) or • Authorised Person Electrical Refresher (MA) In addition, as applicable, to appointment: • Authorised Person Hazardous Areas (Electrical) (MA) • Authorised Person MOD Airfield Systems (MA) Plus the following courses and skills training as deemed necessary by the CAE: • IRCA approved Auditor training • Appropriate H&S training course certified/approved by an appropriate body • Equality & Diversity training • A recognised Behavioural Interviewing course Plus Technical skills training as identified by the CAE/SAA.
	Mechanical Systems	• For a new prospective AE(M) - Background and Awareness Training (MA) • Authorising Engineer course (MA) • Authorised Person Mechanical Systems (MA) • CAE to assess the need for the AE(M) to have the Employer's Emergency First Aid and Fire Awareness Training In addition, as applicable, to appointment: • Medical Gas & Pipeline Systems (MGPS) • Dental Air & Vacuum Systems (DAVS) Gas Management

		Plus the following courses and skills training as deemed necessary by the CAE: • IRCA approved Auditor training • Appropriate H&S training course certified/approved by an appropriate body • Equality & Diversity training • A recognised Behavioural Interviewing course Plus Technical skills training as identified by the CAE/SAA
	Petroleum	For a new prospective AE(PET) – • Background and Awareness Training (MA) • Authorising Engineer course (MA) • CAE to assess the need for the AE to have the Employer's Emergency First Aid and Fire Awareness Training • CAE to assess the need for the AE(PET) to have a medical examination based on HSE guidelines for the wearing of full BA if there is a requirement (R5-BA RPE APF40) • Authorised Person Petroleum (MA) or • Authorised Person Petroleum Refresher (MA) In addition, as applicable, to appointment: • Gas Management Plus the following courses and skills training as deemed necessary by the CAE: • IRCA approved Auditor training • Appropriate H&S training course certified/approved by an appropriate body • Equality & Diversity training • A recognised Behavioural Interviewing course Plus Technical skills training as identified by the CAE/SAA
	Confined Spaces	For a new prospective AE – • Background and Awareness Training

		(MA) • Authorising Engineer course (MA) • CAE to assess the need for the AE(CS) to have the Employer's Emergency First Aid and Fire Awareness Training • CAE to assess the need for the AE(CS) to have a medical examination based on HSE guidelines for the wearing of full BA if there is a requirement (R5-BA RPE APF40) • Authorised Person Confined Spaces (MA) or • Authorised Person Confined Spaces Refresher (MA) Plus the following courses and skills training as deemed necessary by the CAE: • IRCA approved Auditor training • Appropriate H&S training course certified/approved by an appropriate body • Equality & Diversity training • A recognised Behavioural Interviewing course Plus Technical skills training as identified by the CAE/SAA
	Working at Height (Restricted High Places)	For a new prospective AE(WAH) – • Background and Awareness Training (MA) • Authorising Engineer (MA) • Authorised Person Working at Height (MA) • CAE to assess the need for the AE(WAH) to have the Employer's Emergency First Aid and Fire Awareness Training • A Certified Medical examination if the AE(WAH) requires to be fit to climb – CAE to assess the requirement Plus the following courses and skills training as deemed necessary by the CAE: • IRCA approved Auditor training • Appropriate H&S training course certified/approved by an appropriate body • Equality & Diversity training • A recognised Behavioural Interviewing course

		Plus Technical skills training as identified by the CAE/SAA
Authorised Person	Electricity (HV, LV, AGL)	For a new prospective AP(HV) – • Background and Awareness Training (MA) • AE to assess the need for the AP(HV) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Electrical (MA) or • Authorised Person Electrical Refresher (MA) In addition, as deemed applicable to the appointment by the AE: • Authorised Person Hazardous Areas (Electrical) (MA) • Authorised Person MOD Airfield Systems (MA) Plus Technical skills training as identified by the AE/CAE For a new prospective AP(LV) – • Background and Awareness Training (MA) • AE to assess the need for the AP(LV) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Electrical Low Voltage (MA) In addition, as deemed applicable to the appointment by the AE: • Authorised Person Hazardous Areas (Electrical) (MA) • Authorised Person MOD Airfield Systems (MA) Plus Technical skills training as identified by the AE/CAE
	Mechanical	For a new prospective AP(M) – • Background and Awareness Training (MA) • AE to assess the need for the AP(M) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Mechanical (MA)

		In addition, as deemed applicable to the appointment by the AE: • A recognised Medical Gas & Pipeline Systems (MGPS) course • A recognised Dental Air & Vacuum Systems (DAVS) course • A recognised Gas Management course Plus Technical skills training as identified by the AE/CAE
	Petroleum	For a new prospective AP(PET) – • Background and Awareness Training (MA) • AE to assess the need for the AP to have a medical examination based on HSE guidelines for the wearing of full BA and if there is a requirement (R5-BA RPE APF40) • AE to assess the need for the AP(PET) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Petroleum (MA) or • Authorised Person Petroleum Refresher (MA) In addition, as deemed applicable to the appointment by the AE: • Gas Management Plus Technical skills training as identified by the AE/CAE
	Confined Spaces	For a new prospective AP(CS) – • Background & Awareness training (MA) • AE to assess the need for the AP to have a medical examination based on HSE guidelines for the wearing of full BA and if there is a requirement (R5-BA RPE APF40) • AE to assess the need for the AP(CS) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Confined Spaces (MA) or • Authorised Person Confined Spaces Refresher (MA) Plus Technical skills training as identified by the AE/CAE

	Working at Height (Restricted High Places)	For a new prospective AP(WAH) – • Background and Awareness Training (MA) • AE to assess the need for the AP(WAH) to have the Employer's Emergency First Aid and Fire Awareness Training • Authorised Person Working at Height (MA) • AE to assess the requirement for the AP(WAH) to climb and hence if medical certification of fitness to climb is required Plus Technical skills and climbing skills training as identified by the AE/CAE

Notes

1. A list of the MOD approved training providers for the above MOD Approved courses is issued periodically by DE Estates Strategy & Policy as a Policy Instruction.

2. A List of the Principal Authorising Authority, Senior Authorising Authorities and Deputy Senior Authorising Authorities will be issued annually by DE Estates Strategy & Policy as a Policy Instruction.

3. (MA) indicates that those providing the course will be required to hold a current certificate of approval for it from MOD