

**2016**  
(16.10.16)

# **Standard Operating Procedure for Certificate of Competency as a Cable Jointer**

**Under The Electricity Ordinance Chapter 50  
and the Electricity Rules, 1999**

Abstract:

This document provides procedure and guidelines for application to be a certified Cable Jointer.

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## TERMS

CAAC	Competency, Allowance and Authorization Committee
Certificate holder	Certificate holder who is public applicant
EIU	Electrical Inspectorate Unit, Ministry of Public Utilities
EOER	Electricity Rules and Electricity Ordinance
Interview candidate	Interview candidate who is employee of Sarawak Energy Berhad
Person	Employee of Sarawak Energy Berhad
SEB	Sarawak Energy Berhad
STC	SESCO Training Centre

## **A. APPLICATION**

1. Applicant can apply via online at [www.eMINDS.sarawak.gov.my](http://www.eMINDS.sarawak.gov.my).
2. Applicant also can submit the application by submitting the duly completed application form to Electrical Inspectorate Unit office at 11<sup>th</sup> Floor, Wisma Satok.
3. New Application Form and Renewal Form for the Certificate of Competency as a Cable Jointer can be down loaded from [www.mpu.sarawak.gov.my](http://www.mpu.sarawak.gov.my)
4. Applications for a person who had fulfilled all conditions to be issued the certificate of competency as a Cable Jointer shall be made at eMINDS. sarawak.gov.my.
5. All parts of the forms at eMINDS.sarawak.gov.my must be completed and attached with relevant supporting documents.
6. All applications must fulfill requirements as stated in Rule 51 of the Electricity Rules, 1999 and circular No.1/2008 certification of Cable –Jointers issued by the Competency Training Division (Previously known as SEB/SESCO Training Centre Kuching).
7. Any application for grading shall require the person to submit a fresh application to the Competency Training Division and also repeat the training program at the relevant voltage level with the recommendation of the mentor.
8. Other information is available at [www.mpu.sarawak.gov.my](http://www.mpu.sarawak.gov.my).

## **B. RENEWAL**

1. Applicant shall apply for renewal of his certificates via online at [www.eMINDS.sarawak.gov.my](http://www.eMINDS.sarawak.gov.my).
2. Application for renewal must be attached with the person's copy of valid first aid certificate.
3. All parts of the renewal forms at eMINDS.sarawak.gov.my must be completed and attached with relevant supporting documents.
4. Renewal for Certificate of Competency as a Cable Jointer can be made up to a maximum of two years from the expiry date.
5. For renewal of Certificate of Competency as a Cable Jointer, the certified cable – jointer shall show that he has carried out ten joints successfully during the past two year, and, with no record of joint failures during the two years. Should there be no such record, or, should one of his/her joints fail (excluding failure due to excavation or other external factors) during the two years stated, he shall be required to undergo another grading examination prior to renewal of his/her certification. (Appendix B- Sample of Joint Log)
6. All certified cable jointers shall diligently keep a record of all joints (both low and high voltages) inclusive of terminations which he has carried out in the Cable Jointing Logbook for the renewal of their Cable Jointing Certificates.
7. All applications for renewal shall be submitted to the CAAC using Form CAAC 02 with the Cable Jointing Logbook attached. Certification of the cable joints completed and

their integrity shall be made by the relevant SEB/SESCO Engineer-in-charge of the cable-jointing works. The entries in the Logbook shall be verified with the records in the SEB/SESCO Distribution Network Asset database by the CAAC. (For any work involved with SEB/SESCO system)

8. Information on all joints and terminations on SEB/SESCO power system shall be recorded and tagged by the SEB/SESCO Engineer-in-charge. The tag shall contain the Joiner's ID, the Joint number and the date of Jointing.
9. The Cable Joiners must ensure that the completed cable joints carried out in SEB/SESCO system, are recorded in the SEB/SESCO Distribution Network Asset database.
10. Certification of cable joints carried out on Non-SEB/SESCO system can be made by a Professional Engineer in Electrical Field. (For public application which not involved SEB/SESCO system)
11. The flowchart showing the renewal process is attached in Appendix B.

## **C. CERTIFICATE RESTRICTION**

1. Employee of Sarawak Energy Berhad who had been issued with the Certificate of Competency as a Cable Joiner shall be restricted as follows:

**“Limited to Sarawak Energy Berhad/SESCO Installations Only”**

2. Certificate holder requires a consent letter from their management (CAAC) if they wish to open his certificate restriction in the case of retirement or resignation.
3. The Certificate of Competency as a Cable Joiner issuance to the public applicant shall be made open.

## **D. COURSES AND EXAMINATION**

1. Person may attend relevant course(s) and examination(s) at institutions accredited by EIU. Updated list of Institutions shall be available at [mpu.sarawak.gov.my](http://mpu.sarawak.gov.my).
2. Criteria to apply for oral examination are as follows:
  - 1.1. the age shall be at least 45 years of age;
  - 1.2. pass the practical examination;
  - 1.3. sit and failed at least three (3) times of the theory examination.

*Ref BOE Minute No.22 Min 4.5*

## **E. INTERVIEW**

1. The interview shall be conducted at EIU for the upgrading of the category to voltage higher voltage category and upgrading voltages
  - 1.1. Interviews for category and voltage level upgrade for Certificate of Competency

- 1.2. Interviews for Electrical Supervisors
- 1.3. Interviews for Competent Electrical Engineer
- 1.4. Interviews for holders of Certificate of Competency issued by Suruhanjaya Tenaga
- 1.5. Interviews for certificates which had been expired for more than three years
2. Adequate notice will be given before the interviews are conducted.
3. The results of the interviews are subject to the BOE endorsement except for item (1.5).
4. EIU shall inform the endorsed results to CAAC Secretariat who will inform the results to interview candidates.
5. Application for the certificate can be made at [eMINDS.sarawak.gov.my](http://eMINDS.sarawak.gov.my) after the results had been informed to CAAC secretariat.

## **F. COMPETENCY, ALLOWANCE AND AUTHORIZATION COMMITTEE (CAAC)**

1. CAAC is a committee endorsed by the EIU BOE to conduct the following interviews:
  - 1.1. Interviews for restricted switching authorization
  - 1.2. Interviews for open switching authorization
  - 1.3. Interviews for STC SEP trainees
1. The interviews are to be conducted both for SEB employees and the public.
2. CAAC secretariat shall forward CAAC interview assessment and CAAC recommendation to EIU for the BOE endorsement for all “Restricted” switching endorsement.
3. CAAC secretariat shall forward Course Certificates/ Attachment Program and CAAC interview assessment and CAAC recommendation to EIU for the BOE endorsement for all “Open” switching endorsement.
4. Procedure and guidelines for switching are as per Appendix B.

### ***Board of Examiners’ Meeting No. 19 Min 3.3***

5. In the case of a public applicants, all cost incurred shall be borne by the applicant himself and to SEB’s discretion.
6. The results of the interviews are subject to the BOE endorsement. Detailed documents to be submitted are listed in Appendix B.
7. EIU shall inform the endorsed results to CAAC Secretariat who will inform the results to interview candidates.
8. STC SEP Trainees are individuals recruited for STC training program who are not yet SEB employees. The training is for the Certificate of Competency as a Chargeman L1. The training duration is one year and a half.

9. The BOE had granted that these trainees may sit for the Chargeman L1 examination and successful candidates can be certified upon fulfilling their experience requirement of two years through the recommendation of CAAC.

*Board of Examiners' Meeting No. 4 Board Paper No. 6/2005*

10. Otherwise, they may apply to EIU after having not less than three year experience in an environment where electrical equipment is in operation and has had experience of controlling live equipment.
11. Item (14) is with the condition that they had passed the relevant competency examination and the EOER examination.

## **G. SESCO TRAINING CENTRE (STC)**

1. STC as Accredited Institution
  - 1.1. STC is an accredited Institution for relevant courses and examinations issued under the Electricity Rules, 1999. STC is subject to all terms, conditions and guidelines for accredited Institutions.
  - 1.2. Refer to Manual & Guideline for the Accreditation of Institutions for Competency Training and Examination under the Electricity Rules, 1999, FREQUENTLY ASKED QUESTIONS Version 1.2 (20th February 2014) for terms, conditions and guidelines for accredited Institutions.
  - 1.3. STC shall determine the eligibility of their course participants and examination candidates.
  - 1.4. All course participants will be issued Certificate of Attendance upon successfully completing the Course.
  - 1.5. STC shall call for Examination Result Review Meeting with EIU periodically.
  - 1.6. The examination results shall be endorsed by STC Manager and Director of Electricity Supply or his representative.
  - 1.7. STC shall inform the examination results to examination candidates after the results had been endorsed.
  - 1.8. All examination candidates will be issued result slip after the examination results is endorsed.
  - 1.9. STC shall forward any new/renewal applications for issuance of the Certificate of Competency as a Cable Jointer.
  - 1.10. STC shall proceed to arrange for the applicant to attend interview by the CAAC with the applicant for new/ renewal application.
  - 1.11. CAAC secretariat shall forward CAAC interview assessment and CAAC recommendation to EIU for the BOE endorsement.

- 1.12. Application for new/ renewal of Certificate of Competency as a Cable Jointer shall be made directly to STC.
  - 1.13. STC shall proceed to arrange for the applicant to attend course, grading or examination and interview by the CAAC with the applicant.
  - 1.14. CAAC secretariat shall forward Course Certificates/ Attachment Program and CAAC interview assessment and CAAC recommendation to EIU for the BOE endorsement.
  - 1.15. This procedure is complying with both SEB employees and public applicants.
  - 1.16. Procedure and guidelines are as per Appendix B.
2. All registrations, payments and arrangements for the courses shall be made directly with STC.
  3. Any other arrangements are to be mutually agreed by the EIU and STC.



## LIST OF APPENDIXES

Appendix A : Grading (Methodology)

Appendix B :

- 1 Procedure for Issuance of Certificate of Competency as a Cable Jointer
- 2 Procedure for Renewal of Certificate of Competency as a Cable Jointer
- 3 Table A: Documents submitted to EIU for the issuance of the Certificate of Competency as a Cable Jointer.

## GRADING (METHODOLOGY)

### 1.0 **GRADING METHOD**

#### 1.1 **Theoretical Assessment – Jointers Literacy (Objectives Test)**

It is the utmost importance for the jointers to read and understand the instructions given in writing and also giving instructions to their subordinates, ideally the knowledge of cable construction could help him in understanding the concept of jointing.

New materials and techniques have changed the way of jointing for this reason, an objective test is required to determine the knowledge of a jointer.

A minimum of 50% marks in the objective test shall be obtained to determine the ability of the cable-jointer to read and understand simple instructions. Failure in the objective test will automatically stop them from proceeding for further tests.

#### 1.2 **Practical Assessment**

The grading will be judged according to the jointer's work ethics, cleanliness, precision and skill. These qualities are expected of a good jointer and will be scrutinized in the process of the grading. Certain steps in the jointing process are considered critical and any mistakes in these steps will deem the failure of the joints and the grading.

#### 1.3 **Work Ethics**

Proper attire, proper tools i.e. using the right tool for the job, diligently following the instructions will give the jointer a plus point. The jointer will also be examined on how he performs the initial test in confirming the cable is dead, phasing and performing moisture test on the cable, following strictly to the safety rules. Failure in doing these will automatically fail him for the whole test.

#### 1.4 **Cleanliness**

Cleanliness is the integral pan of good jointing practices. As dust and moisture will create electrical instability in the joints which will lead to eventual breakdown, the jointers, tools as well as the joint pit are expected to be clean and free from dust and moisture at all times.

#### 1.5 **Precision and Skill**

The design of a cable joint is solely determined by the exact dimensions indicated by the manufacturer in the jointing instructions and deviation from that measurement will effect the performance of the joints.

Skill in cutting the cable insulation and screen is needed so as not to injure any parts of the cable. Any injury in any of these areas will produce a hot spot and eventual failure. These are critical areas, and, are considered to be the essential parts in determining whether the jointer will produce a quality joint.

#### 1.6 **Final Grading**

A final test will be earned out by injecting the completed joint with a high voltage in accordance to the relevant IEC/BS standards.

### 2.0 **PROCEDURES**

Jointers will be graded/ tested in both theoretical and practical aspect of jointing. The test will be in two stages as follows:

- i. Written test on basic cable theory
- ii. Performing the joint
- iii.

#### 2.1 **Written test on basic cable theory**

A written test will be conducted to ascertain the knowledge of the jointer in terms of cable

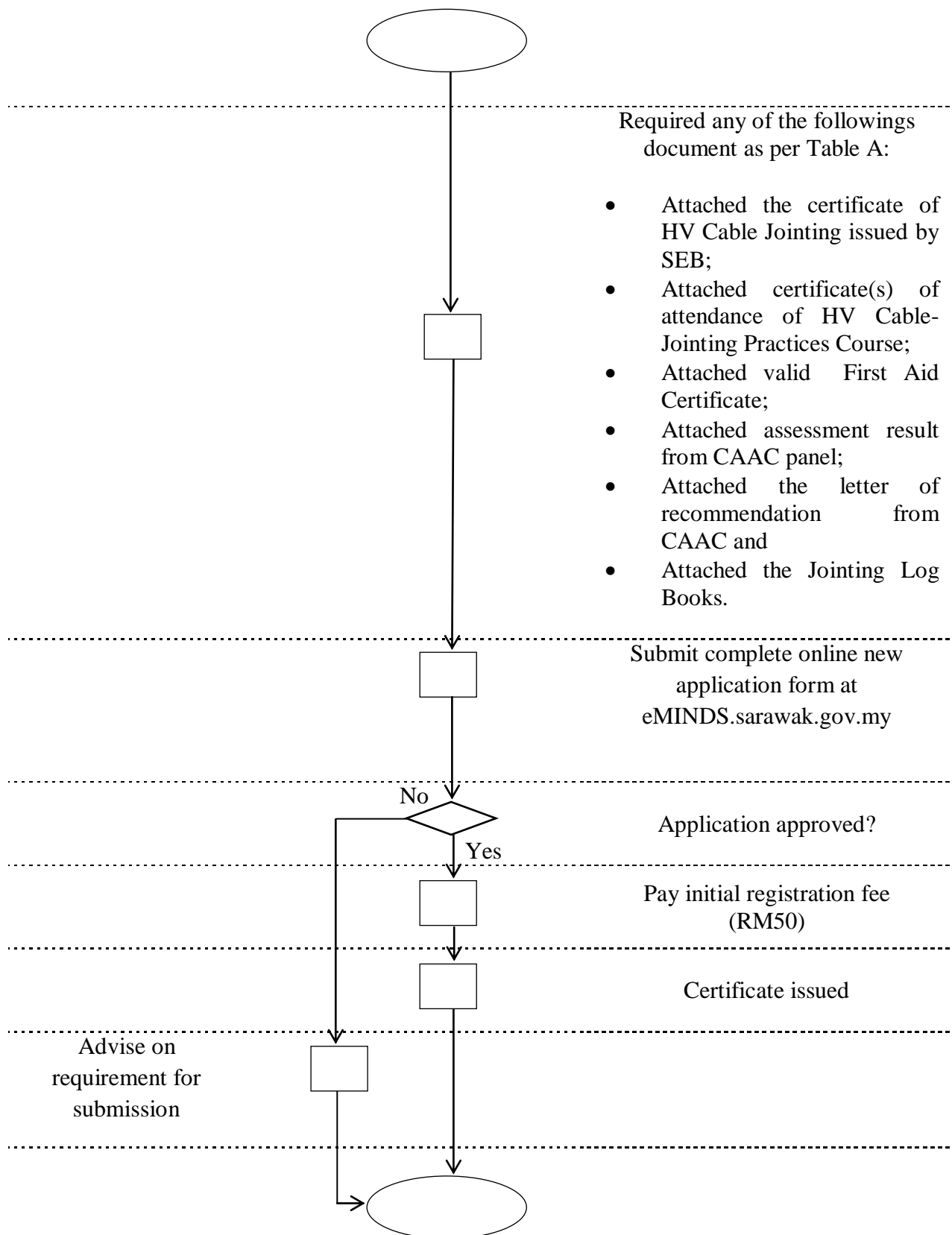
characteristics and ability to read the instructions for cable jointing and safety rules.

Sixty questions of the objective and short type is to be completed within 90 minutes

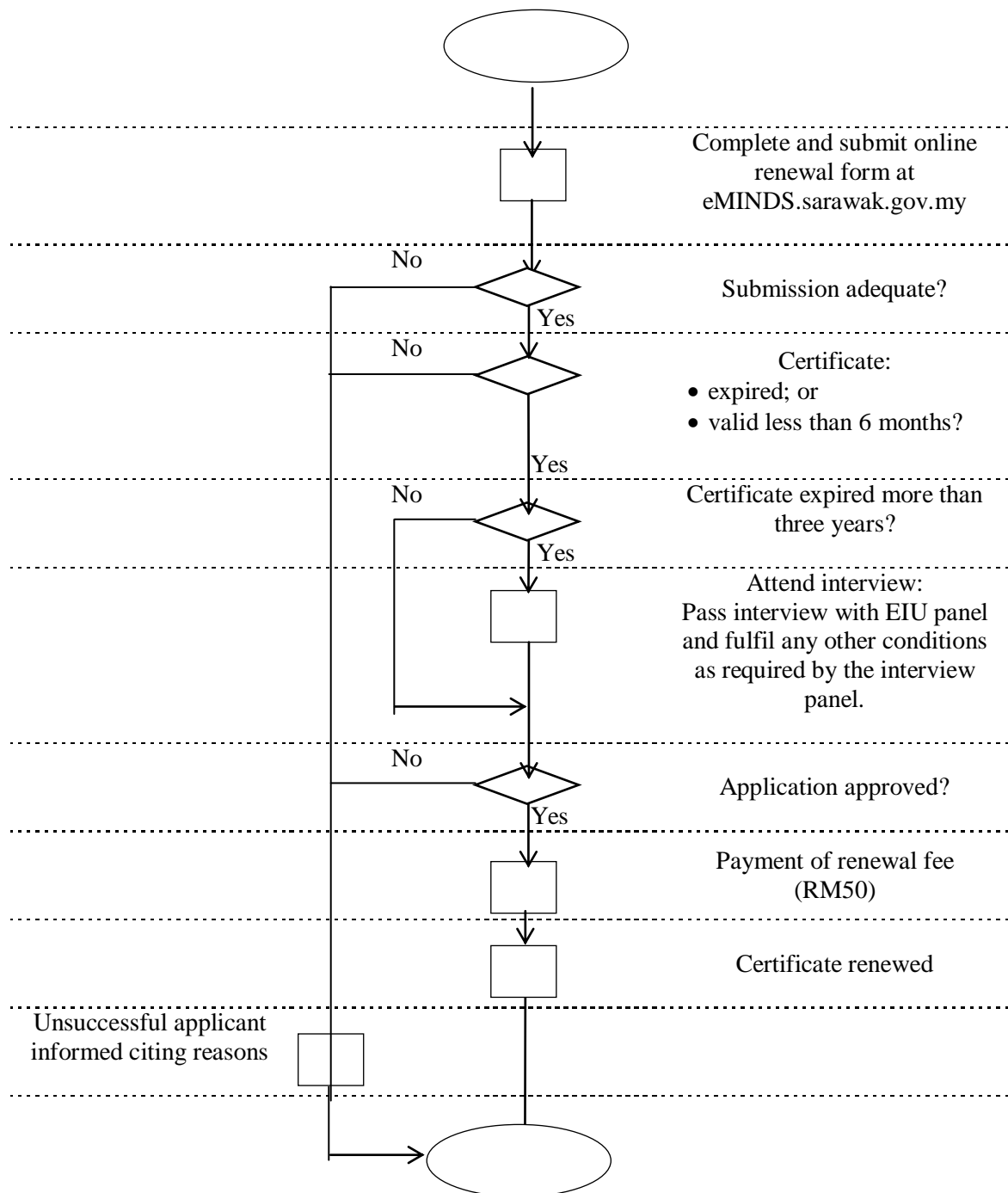
### 2.2 **Performing the joint**

The jointer must perform the joint as instructed during the test. The grade will be determined by marks given in accordance to a marking scheme.

## Procedure for Issuance of Certificate of Competency as a Cable Joiner



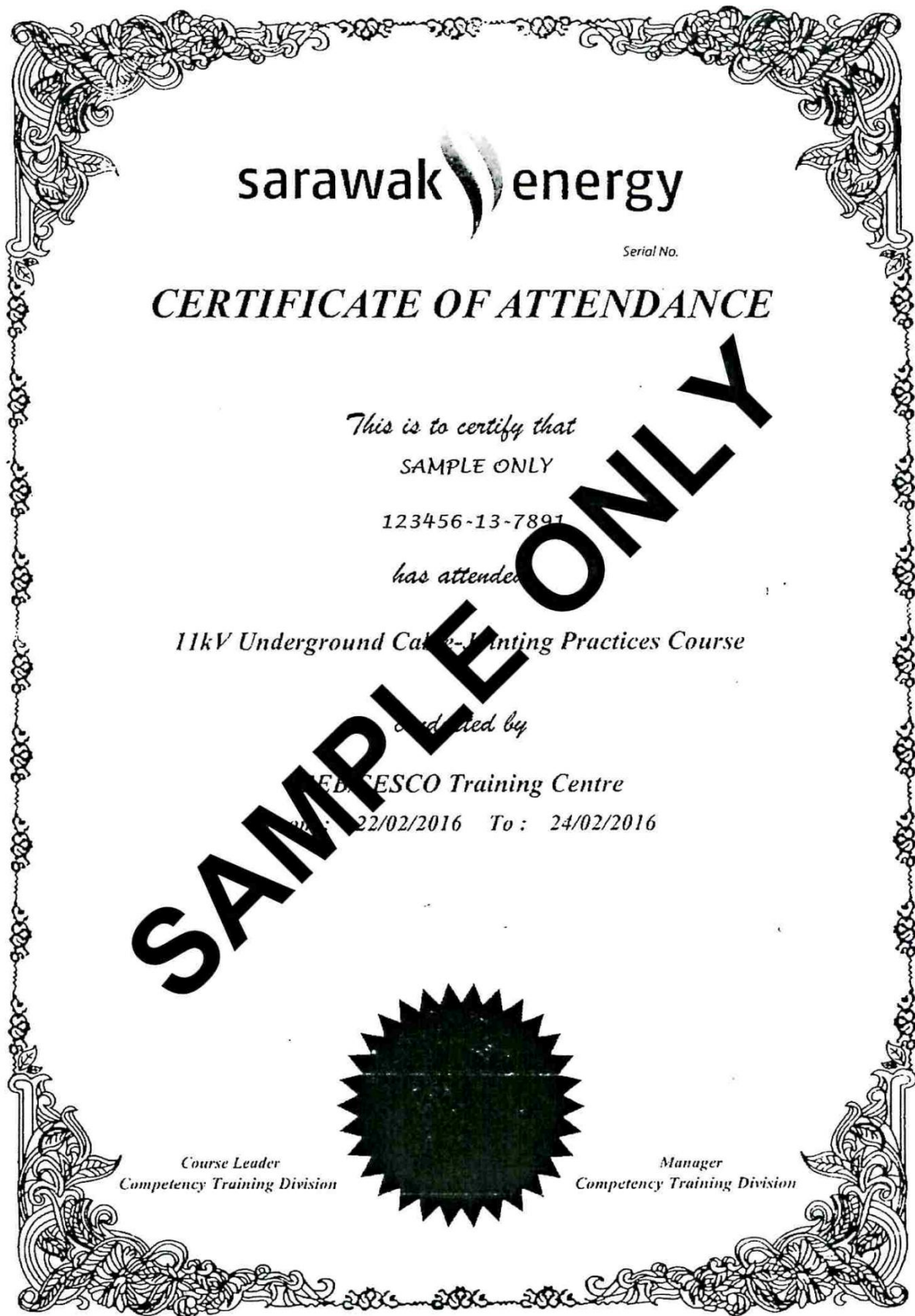
## Procedure for Renewal of Certificate of Competency as a Cable Jointer



**Table A: Documents submitted to EIU for the (New/Renewal) Issuance of Certificate of Competency as a Cable Jointer**

No.	Document	Application	
		SEB	Public
1	Certificate(s) of Attendance of HV Cable-Jointing Practices Course (New) – Sample 1	Required	Required
2	Valid First Aid Certificate (New/Renewal)	Required	Required
3	Assessment result / Certificate of Attainment from SEB / SESCO Training Centre (New/Renewal) – Sample 2	Required	Required
4	Competency, Authorization and Allowance Committee (CAAC) certification (New) – Sample 3  Note: If the applicant involved work with SEB/SESCO installation.	Required	Not Required
5	Jointing Log Book (Renewal) – Sample 4	Required	Required

Sample 1 - Certificate(s) of Attendance of HV Cable-Jointing Practices Course



Sample 2 - Assessment result / Certificate of Attainment from SEB / SESCO Training Centre



SEB / SESCO Training Centre

**CONFIDENTIAL**

Date Generated: 27-Apr-16

### CERTIFICATE OF ATTAINMENT

Name: **SAMPLE ONLY**

IC No: 123456-13-7891

Examination Venue: SEB / SESCO Training Centre

Date: 15 - 18 March 2016

EXAMINATION TITLE	THEORY	PRACTICAL
GRADING OF 11KV CABLE JOINTERS	PASS	PASS

COORDINATED BY:

CHIEF INSPECTOR  
COMPETENCY TRAINING DIVISION


CERTIFIED BY:

MANAGER  
COMPETENCY TRAINING DIVISION



Sample 3 - Competency, Authorization and Allowance Committee (CAAC) certification:



CERT. NO.: 123456789

**CERTIFICATE OF COMPETENCY FOR EMPLOYEE  
(TECHNICAL)**

**A. PERSONAL PARTICULARS:**

Name	: SAMPLE ONLY	I.C No.	: 123456789-13-7891
Staff No.	: 123456	Department	: Distribution
Division	: Northern Region	Section	: Operations & Maintenance
Post	: Technician	Date of Birth	: 01 Dec-1975

**B. PERMITTED SCOPE OF WORK(S) - TYPE & RATED VOLTAGE:**

	<u>Rated Voltage</u>
HV Cable Jointing	Up To 33kV (Heatshrink & Taping)

**C. PERMISSION TO PERFORM LOW VOLTAGE SWITCHING:**  
 Not Authorized to carry out Low Voltage Switching and to issue Electrical Permit-to-Work for work on Low Voltage system.

**D. AREAS OF OPERATION:**  
 Valid for all areas of operation throughout the Company.

**E. VALIDITY PERIOD:**  
 TWO (2) years from the date of issue.


Date of issue: 25 September 2015  
 Valid till: 24 September 2017

Chairperson  
 Competency, Authorization and Allowance  
 Committee

*The certificate holder is required to take necessary care and safety precautions while performing work and to ensure that works are carried out in accordance with SEB/SESCO's standard operating practices. The Committee shall not be held responsible for any accident or incident which may arise from any works carried out by the certificate holders.*

(Valid within Sarawak Energy Berhad only)

## Sample 4 - Jointing Log Book



**SARAWAK ENERGY**

**LOG BOOK  
FOR  
RENEWAL OF CABLE JOINTING  
CERTIFICATE**

**Name of Jointer** SAMPLE ONLY

**Jointer Identification Reference** : \_\_\_\_\_

**Date of Issue** : \_\_\_\_\_

**Working Level** : \_\_\_\_\_

**Signature of Jointer** : \_\_\_\_\_

**Effective Date** : \_\_\_\_\_

**Log Book No.** : \_\_\_\_\_