1. **PILOT WIRE INSULATION TEST & LOOP RESISTANCE:**

 Bay Name

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Core | Color | Continuity test | Insulation Test(G ohm) | Loop Resistance(Ω) | Remarks |
| 1 | White |  |  |  |  |
| 2 | Blue |  |  |
| 3 | White |  |  |  |
| 4 | Orange |  |  |
| 5 | White |  |  |  |
| 6 | Green |  |  |
| 7 | White |  |  |  |
| 8 | Brown |  |  |
| 9 | White |  |  |  |
| 10 | Gray |  |  |
| 11 | Red |  |  |  |
| 12 | Blue |  |  |
| 13 | Red |  |  |  |
| 14 | Orange |  |  |
| 15 | Red |  |  |  |
| 16 | Green |  |  |
| 17 | Red |  |  |  |
| 18 | Brown |  |  |
| 19 | Red |  |  |  |
| 20 | Gray |  |  |
| 21 | Black |  |  |  |
| 22 | Blue |  |  |
| 23 | Black |  |  |  |
| 24 | Orange |  |  |

1. **RELAY DATA:**

Local S/S : Remote S/S :

Relay SR. NO : Relay SR. NO. :

Relay type : Relay Type :

PIT connection : Stabilizing Res :

K ratio :

KS :

KT :

N :

RL :

RPP :

1. **LOCAL INJECTION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input fromS/S | Phase | Operatingcurrent injected | pilot current IN mA | Relay operation & indication |
| Local S/S | Remote S/S |
| Local S/S | Remote S/S | Relay pilot current | Main pilot current | Relay pilot current | Main pilot current | Local S/S | Remote S/S |
|  | R-N |  |  |  |  |  |  |  |  |
| Y-N |  |  |  |  |  |  |  |  |
| B-N |  |  |  |  |  |  |  |  |
| R-Y |  |  |  |  |  |  |  |  |
| Y-B |  |  |  |  |  |  |  |  |
| B-R |  |  |  |  |  |  |  |  |

1. **REMOTE INJECTION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input fromS/S | Phase | Operatingcurrent injected | pilot current IN mA | Relay operation & indication |
| Local S/S | Remote S/S |
| Local S/S | Remote S/S | Relay pilot current | Main pilot current | Relay pilot current | Main pilot current | Local S/S | Remote S/S |
|  | R-N |  |  |  |  |  |  |  |  |
| Y-N |  |  |  |  |  |  |  |  |
| B-N |  |  |  |  |  |  |  |  |
| R-Y |  |  |  |  |  |  |  |  |
| Y-B |  |  |  |  |  |  |  |  |
| B-R |  |  |  |  |  |  |  |  |

1. **Short The Pilot Terminal, Check Relay Restrain at 2 X Iop Injection [ ]**
2. **Pilot OHM Loop Resistance :**

 Core 1-2 (IT SEND) # :

 Core 3-4 (IT RECEIVES) # :

 Core 23-24 (PILOT WIRE) # :

1. **MRTP Supervision Relay Test**

 Relay at S/S

 Simulation at S/S:

|  |  |  |
| --- | --- | --- |
| Description | Local S/S | Remote S/S |
| Pilot open |  |  |
| Pilot shorted |  |  |
| Pilot crossed |  |  |
| Pilot dc current |  |  |

1. **GCM05 End-to-End Test**
	1. **RELAY DATA:**

Local S/S : Remote S/S :

Relay SR.NO. : Relay SR.NO. :

Bay NO. : Bay NO. :

Bay Name : Bay Name :

* 1. **Local Substation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Description |  |  |  |  |
| 1 | ITR Relay Selected IN | Master |  | Slave |  |
| 2 | ITS Relay Selected IN | Master |  | Slave |  |
| 3 | ITR Relay Supervision Voltage +/- |  |  |  |  |
| 4 | ITS Relay Supervision Voltage +/- |  |  |  |  |
| 5 | Pilot voltage send +/- |  |  |  |  |
| 6 | Pilot receive voltage & Current +/- |  |  |  |  |
| 7 | Operating Time (Loop Time) |  |  |  |  |
| 8 | Ripple voltage measured send +/- |  |  |  |  |

* 1. **Supervision Check**

|  |  |  |
| --- | --- | --- |
| Item | Description | Alarms at CP |
| Local S/S | Remote S/S |
| 1 | Pilot open – send |  | IT REC Faulty |
| 2 | Pilot open – Received | IT REC Faulty |  |
| 3 | Pilot short – send | IT SND Faulty | IT REC Faulty |
| 4 | Pilot short – Received | IT REC Faulty | IT SND Faulty |
| 5 | Pilot cross – send |  | IT REC Faulty |
| 6 | Pilot cross – Received | IT REC Faulty |  |

* 1. **Remote Substation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item | Description |  |  |  |  |
| 1 | ITR Relay Selected IN | MASTER |  | SLAVE |  |
| 2 | ITS Relay Selected IN | MASTER |  | SLAVE |  |
| 3 | ITR Relay Supervision Voltage +/- |  |  |  |  |
| 4 | ITS Relay Supervision Voltage +/- |  |  |  |  |
| 5 | Pilot voltage send +/- |  |  |  |  |
| 6 | Pilot receive voltage & Current +/- |  |  |  |  |
| 7 | Operating Time (Loop Time) |  |  |  |  |
| 8 | Ripple voltage measured send +/- |  |  |  |  |

* 1. **Supervision check:**

|  |  |  |
| --- | --- | --- |
| Item | Description | Alarms at CP |
| Local S/S | Remote S/S |
| 1 | Pilot open – send |  | IT REC Faulty |
| 2 | Pilot open – Received | IT REC Faulty |  |
| 3 | Pilot short – send | IT SND Faulty | IT REC Faulty |
| 4 | Pilot short – Received | IT REC Faulty | IT SND Faulty |
| 5 | Pilot cross – send |  | IT REC Faulty |
| 6 | Pilot cross – Received | IT REC Faulty |  |