





# Module DC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	remove / delete	Remarks
	The area isolated in an emergency. This does not include abutting sections.					✓				
	<b>Floater</b>									
	A short piece of conductor rail, normally at a crossover, that can be fed from either of the adjacent lines but not both at the same time.					✓				
	<b>Formal message</b>									
	A message between the ECO and another person when carrying out the instructions in this module. See section 5.3 of this module.					✓				
	<b>Guard boarding</b>									
	Protective boarding placed alongside one or both sides of the conductor rail at certain locations.					✓				
	<b>Insulating trough</b>									
	A portable insulating cover which fits over the conductor rail.					✓				
	<b>Insulation</b>									
	Material which has extremely high resistance to the flow of electric current.					✓				
	<b>Isolated</b>									
	Switched off and made secure from an electricity supply.					✓				
	<b>Isolation</b>									
	The action of causing one or more electrical sections or sub-sections of the conductor rail equipment to be isolated.					✓				
	<b>a) Emergency isolation</b>									
	An isolation provided when it is essential to switch off the electricity supply without delay.	✓	✓							DC 1 - HB17 1. Now called an emergency switch off
	<b>b) Local isolation</b>									
	An isolation taken as shown in published local instructions.					✓				
	<b>c) Planned isolation</b>									
	An isolation requested for planned work.					✓				
	<b>d) Temporary isolation</b>									
	An isolation requested for short-term local activities as shown in this module.					✓				
	<b>Isolation diagram</b>									
	A diagram showing the DC electrified lines, the CRE sectioning and feeding arrangements together with signal and point numbers.					✓				
	<b>Comprehensive track feeding diagram</b>									
	An isolation diagram with more information showing bridges, platforms, tunnels and other features.					✓				
	<b>Isolation instructions</b>									
	Instructions concerning electrical switching, limits of working and limits of isolations that are kept (where appropriate) at ECRs, stations, depots and signal boxes.					✓				









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	Collector shoes on each traction unit collect current from the conductor rails. After passing through the electrical equipment on the train, the current is returned to the substation through the axles and wheels on one or both of the running rails.	all concerned				✓				
	<b>c) Return rails</b>									
	In some places an additional rail, bonded to one or both of the running rails, is used to provide a better return circuit.	all concerned				✓				
	<b>Return rail supported on insulators</b>									
	This is always in the four-foot and is known as a fourth rail.	all concerned				✓				
	<b>Return rail not on insulators</b>									
	This rail is normally mounted on the sleepers between the running rails. In some cases this rail is mounted on the sleeper ends on the opposite side to the conductor rail.					✓				
	<b>d) Track parallelling huts</b>									
	Track parallelling huts are located between substations and connect sections of conductor rail together through circuit breakers.					✓				
	<b>e) Control of equipment</b>									
	Substations, track parallelling huts and switching stations are unattended and kept closed and locked. The equipment in these buildings is controlled from an electrical control room (ECR), which is staffed continuously under the supervision of an ECO.	all concerned				✓				
	Telephones to contact the ECO are normally provided on the outside of these buildings.	all concerned				✓				
	<b>3.4 Conductor rail arrangements</b>									
	Gaps are provided in the conductor rail at: • points and crossings • some train stop or signal positions • track crossings • other locations for sectioning purposes.	all concerned				✓				
	If there is a gap, the conductor rails on each side of the gap are connected by an insulated jumper cable. This does not apply at gaps provided for sectioning purposes.	all concerned				✓				
	Ramps are provided at the end of conductor rails and at some points and crossings to ease the passage of train collector shoes.	all concerned				✓				
	<b>3.5 Sectioning</b>									
	<b>a) Sections</b>									
	The conductor rail system is divided into sections.	all concerned				✓				
	Each section is fed through circuit breakers in a substation or track parallelling hut.	all concerned				✓				

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	Each circuit breaker is arranged to open automatically if an electrical fault happens on the section concerned. These circuit breakers are under the control of the ECO and can be opened or closed by remote control.	all concerned				✓				
<b>b) Sub-sections</b>										
	Some sections are divided into sub-sections by switches. These switches are either operated manually or motorised for remote operation.	all concerned				✓				
	These switches are either adjacent to, or mounted directly on, the conductor rail and connected by insulated cable.	all concerned				✓				
	A sub-section of conductor rail can be switched off if there is a fault or for maintenance purposes without the electricity supply to other sub-sections being switched off.	all concerned				✓				
<b>3.6 Track feeding arrangements and instructions</b>										
	The sectioning arrangements are shown on isolation documents, copies of which are kept at: <ul style="list-style-type: none"> <li>• Network Rail Operations Control</li> <li>• signal boxes</li> <li>• ECRs</li> <li>• other necessary locations.</li> </ul>	all concerned				✓				
<b>3.7 Warning arrangements for new CRE equipment</b>										
	If an area is being electrified, the instructions in this module will not apply until the equipment has been declared live. You will be told about this by an energisation warning notice, which will appear: <ul style="list-style-type: none"> <li>• in the Weekly and Periodical Operating Notice</li> <li>• on posters at all the necessary locations</li> <li>• on a notice issued to you personally (if necessary).</li> </ul>	all concerned	✓	✓						DC 2 - HB17 2
	If you are not sure if the CRE is live or not, you must treat it as being live and dangerous to life.	all concerned	✓	✓						DC 2 - HB17 2
<b>4 Safety of personnel working on or close to the CRE</b>										
<b>4.1 Precautions that must be taken</b>										
	You must always take special care when working close to the conductor rail. It is dangerous to step on, touch or come into contact with the conductor rail or its connections.	all concerned	✓	✓						DC 3.1 - HB17 3.1

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	If you are applying a track circuit operating clip, or a track circuit operating device (T-COD), you must always apply it to the running rail furthest from the conductor rail first and then to the running rail nearest to the conductor rail. When removing such a device, you must remove it from the rail nearest to the conductor rail first and then from the rail furthest from the conductor rail.	all concerned	✓	✓						DC 4.1 - HB17 4.1
	If you have to place detonators, you must attach them to the running rail which is furthest from the conductor rail.	all concerned	✓	✓						DC 4.1 - HB17 4.1
	Clearance of track litter at stations must not be carried out until the traction current has been isolated as shown in section 15 of this module or a local isolation instruction.	all concerned			✓					
	If the emergency services need to go on or near the line, the person in charge at the site must tell the emergency services officer in charge about the presence of the conductor rail and the extent of any isolation.	all concerned	✓	✓						DC 4.1 - HB17 4.1
<b>4.2</b>	<b>Moving materials and equipment</b>									
	You should avoid carrying materials or equipment over the conductor rail. If it is necessary to carry an object over a conductor rail, you must make sure that it does not come into contact with a live conductor rail. You must not drag objects across or drop them on a conductor rail.	all concerned	✓	✓						DC 4.2 - HB17 4.2
	You must keep tools, materials and ballast clear of cables, cable routes, insulators, bonds and conductor rails. You must take extra care when unloading materials and equipment.	all concerned				✓				
<b>4.3</b>	<b>Personal protective equipment</b>									
	When working immediately next to live conductor rails, you must use specially insulating gloves or insulating trough covers but only as shown in your employer's instructions.	all concerned			✓					
	For use in an emergency, a pair of specially insulating gloves are kept in signal boxes and at stations with emergency equipment. When not in use, these gloves must be kept in their bag in the designated place.	all concerned			✓					
	You must keep protective equipment clean, dry and free from grease and oil.	all concerned			✓					
	Before using protective equipment near DC electrified lines, you must examine it for any obvious faults and check that it is still within any expiry date. You must not use any protective equipment which shows signs of wear or damage.	all concerned			✓					



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<b>5</b>	<b>Communicating with the ECO</b>									
<b>5.1</b>	<b>Directly</b>									
	You can contact the ECO directly by radio or by telephone.	all concerned						✓		
	If short code telephone numbers are provided, you must only dial them in an electrical emergency.	all concerned						✓		
	Telephones to contact the ECO are normally provided on the outside of substations, track paralleling huts, switching stations and on station platforms.	all concerned						✓		
<b>5.2</b>	<b>By another person</b>									
	If you cannot contact the ECO directly, you should ask another person, such as a signaller, to contact the ECO on your behalf.	all concerned	✓	✓						DC 5.1 - HB17 5.1
	If another person asks you to contact the ECO, you must make sure that you get the necessary information from that person before speaking to the ECO. You must also get any other information that the ECO asks for.	all concerned	✓	✓						DC 5.1 - HB17 5.1
<b>5.3</b>	<b>Formal message numbering system</b>									
	The ECO may use a unique numbering system to handle formal messages. If you are given a message identification number, you must give it each time you speak to the ECO.	all concerned	✓	✓						DC 5.2 - HB17 5.2
<b>6</b>	<b>Switching off the electricity in an emergency</b>									
<b>6.1</b>	<b>Immediate actions</b>									
	<b>a) Types of incident</b>									
	You must immediately contact the ECO or arrange for this to be done if you become aware of: <ul style="list-style-type: none"> <li>• a derailment</li> <li>• a lineside fire</li> <li>• a fire on a vehicle or train</li> <li>• a person in contact with or in danger of coming into contact with the CRE</li> <li>• damage to the CRE</li> <li>• an incident or other emergency requiring, or likely to require, the electricity supply to be switched off.</li> <li>• an emergency evacuation of passengers from a train.</li> </ul>	all concerned	✓	✓						DC 6.1 a) - HB17 6.1
	If you receive a message from another person about an emergency, you must pass on this information to the ECO.	all concerned	✓	✓						DC 6.1 a) - HB17 6.1
	<b>b) Reporting the emergency</b>									
	When you contact the ECO, you must first say 'This is an emergency call'.	all concerned	✓	✓						DC 6.1 b) - HB17 6.1





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	When a line has been blocked to electric trains but is open for other trains, you must: • make sure any approaching train is not fitted with collector shoes, or • get an assurance from the driver that the collector shoes are raised and are secured in this position.	signaller	✓							DC 6.5
	<b>b) Actions of the signaller controlling the exit from the emergency isolation</b>									
	If a train has stopped within the isolated area before allowing it to proceed you must: • make sure the train is not fitted with collector shoes, or • get an assurance from the driver that the collector shoes are raised and are secured in this position.	signaller	✓							DC 6.5
	<b>6.4 Managing an emergency isolation</b>									
	<b>a) If the emergency services are called to site</b>									
	If the emergency services are called to site, you must tell the incident officer of each emergency service about the presence of the CRE and which parts have been switched off.	PICEI	✓	✓						DC 6.6 - HB17 6.4
	<b>b) Shortening an emergency isolation</b>									
	If it is necessary to shorten the emergency isolation, the ECO will arrange for this to be done but only after agreeing revised limits with: • the PICEI • Operations Control • the signal box supervisor or signaller.	all concerned				✓				
	The ECO will quote the electrical section numbers where these are used.	all concerned				✓				
	If the emergency services are on site, you must agree the revised isolation limits with the incident officer of each emergency service	PICEI	✓	✓						DC 6.6 - HB17 6.4
	<b>c) Carrying out work on or close to CRE</b>									
	If a section has been isolated in an emergency and it is necessary to carry out work on or close to CRE, a planned or temporary isolation must be taken as shown in section 15 or section 16 of this module.	all concerned	✓	✓						DC 6.6 - HB17 6.4 (This is for the PICEE)
	When a planned or temporary isolation to allow work to take place, as shown in section 15 or section 16 of this module has been taken, the ECO will tell you that you are no longer required to carry out any further duties.	PICEI	✓	✓						DC 6.6 - HB17 6.4
	<b>d) Change of PICEI</b>									
	If another person is to take over your duties as the PICEI, you must agree with the ECO who will take. You must give the ECO the name, job title and employer of the person taking over.	PICEI	✓	✓						DC 6.6 - HB17 6.4

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	If you are the person taking over from the PICEI, you must confirm with the ECO that you are now the PICEI.	PICEI	✓	✓						DC 6.6 - HB17 6.4
<b>6.5</b>	<b>Rescuing a person from live CRE</b>									
	If it is necessary to rescue a person from live CRE, you must make sure that everyone is kept clear of the CRE until you have been told by the ECO that the electricity has been switched off.	all concerned	✓	✓						DC 7 - HB17 7
	If it is not possible to get the electricity switched off immediately, you can try to rescue a person from live CRE providing: <ul style="list-style-type: none"> <li>• you cover your hands with something which is dry and will not conduct electricity (for example, dry clothing), and</li> <li>• you stand on dry non-conducting material (for example, dry clothing, wood, thick carpet, thick newspaper or rubber).</li> </ul>	all concerned	✓	✓						DC 7 - HB17 7 Examples are no longer shown (Training and competence)
	If you cannot do this, you must only try to move the person using dry insulating material.	all concerned	✓	✓						DC 7 - HB17 7
	You must not use any metal objects when trying to rescue a person from live CRE.	all concerned	✓	✓						DC 7 - HB17 7
<b>6.6</b>	<b>When the emergency isolation is no longer required and the affected section can be re-energised</b>									
	As soon as the emergency is over and the affected sections can be re-energised you must: <ul style="list-style-type: none"> <li>• immediately warn everyone involved that the electricity is about to be switched on</li> <li>• make sure everyone is clear of the CRE</li> <li>• remove any short circuiting bars or other materials used during the emergency isolation and place them clear of the CRE.</li> </ul>	PICEI	✓	✓						DC 6.6 - HB17 6.4
	When you have done this, you must: <ul style="list-style-type: none"> <li>• tell the ECO that the electricity supply can be restored</li> <li>• wait for further instructions.</li> </ul>	PICEI	✓	✓						DC 6.6 - HB17 6.4
	If the emergency services have been in attendance, the ECO will get an assurance from the operations controller that the emergency services personnel are clear of the line before restoring the electricity supply.	PICEI					✓			
	The ECO will arrange to restore the electricity supply and will tell all concerned when this has been done.	all concerned					✓			
	However, if the ECO cannot restore the electricity supply for some reason, the ECO will carry out arrangements depending on the situation.	all concerned					✓			

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<b>7</b>	<b>Applying short circuiting bars in an emergency</b>									
<b>7.1</b>	<b>When short circuiting bars can be used</b>									
	You must only apply a short circuiting bar if you are competent to do so.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	If it is not possible to use other ways to get the electricity switched off in an emergency, you may apply a short circuiting bar but only when: <ul style="list-style-type: none"> <li>• a person is in danger through contact with the CRE, or</li> <li>• passengers are alighting from a train which has been stopped by failure or accident, or</li> <li>• a short circuit on a train cannot be isolated and there is severe arcing, or</li> <li>• it is shown in a train operating company's instructions to train crew.</li> </ul>	all concerned	✓	✓						DC 6.3 - HB17 6.3
	You must not use a short circuiting bar where there is a guard board between the conductor rail and the adjacent running rail or a yellow plastic shroud is fitted to the underside of the conductor rail.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	You must ask for an emergency isolation if short circuiting bars are not available or they cannot be used.	all concerned				✓				
<b>7.2</b>	<b>Using a short circuiting bar</b>									
	Before you use a short circuiting bar, you must make sure there is no conductor rail section gap between where you apply it and the section of conductor rail you need to be switched off.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	You must tell the ECO as soon as you have used a short circuiting bar and give the exact location where it was applied.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	If the ECO becomes aware that a short circuiting bar has been used, the ECO will not try to restore the electricity supply. The ECO will also make arrangements to stop trains bridging the section gaps and making the conductor rail live again.	all concerned				✓				
<b>7.3</b>	<b>When a short circuiting bar has been used</b>									
	When you have used a short circuiting bar, the conductor rail you have applied it to will be de-energised.	all concerned				✓				
	You must consider any other portion of conductor rail to be live until the ECO gives an assurance that they have been switched off.	all concerned	✓	✓						DC 3.1 - HB17 3.1
	Once you have applied a short circuiting bar, you must leave it in position until it is no longer required.	all concerned	✓	✓						DC 6.3 - HB17 6.3

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	When an electrical section has been switched off by the automatic operation of a circuit breaker, the ECO will try to restore the electricity supply.	all concerned				✓				
<b>7.4</b>	<b>Removing a short circuiting bar</b>									
	You must get permission from the ECO before you remove a short circuiting bar.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	You must tell the ECO when the short circuiting bar has been removed.	all concerned	✓	✓						DC 6.3 - HB17 6.3
	When the short circuiting bar has been removed, the ECO will arrange for the running rail and conductor rail to be inspected for signs of damage.	all concerned				✓				
	If there was severe arcing at the site of the short circuiting bar, after use it must be sent for inspection and possible repair.	all concerned				✓				
<b>8</b>	<b>Short circuits</b>									
<b>8.1</b>	<b>Reporting short circuits</b>									
	You must make sure that all short circuits are immediately reported to the ECO.	all concerned	✓	✓						DC 3.2 - HB17 3.2
<b>8.2</b>	<b>ECO's actions</b>									
	When an electrical section has been switched off by the automatic operation of a circuit breaker, the ECO will try to restore the electricity supply.	all concerned				✓				
<b>8.3</b>	<b>If it is not possible to restore the electricity supply</b>									
	<b>a) Finding out the cause of the short circuit</b>									
	The ECO will tell you if it is not possible to restore the electricity supply. You must then agree what arrangements are to be made to find out what has caused the short circuit.	operations controller, signal box supervisor or signaller	✓							DC 11.1 Rule is only for the signaller
	This must include arrangements to examine any train in the electrical section.	operations controller, signal box supervisor or signaller	✓							DC 11.1 Rule is only for the signaller
	Unless you are sure that the fault is with the train, you must also make arrangements for the section of line to be examined.	operations controller, signal box supervisor or signaller	✓							DC 11.1 Rule is only for the signaller
	<b>b) Examining the line</b>									
	You must treat the conductor rail as being live at all times when the line is being examined as the ECO may continue to try to restore the electricity supply.	all concerned	✓	✓						DC 11.2 - HB17 11

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	If you see an object that is causing the short circuit, you must not try to remove it until an appropriate isolation has been taken.	all concerned	✓	✓						DC 11.2 - HB17 11
	When you are examining the line, you must not enter a tunnel until you have told the ECO that you are about to do so. You must tell the ECO immediately you have left the tunnel. When you are in the tunnel, the ECO will not try to restore the electricity supply.	all concerned	✓	✓						DC 11.2 - HB17 11
	<b>c) When the cause of the short circuit has been removed</b>									
	You must tell the driver of each train to proceed at caution over the location of the short circuit, until you have been told by a competent person that it is safe for normal working to be resumed.	signaller	✓							DC 11.3
	You must proceed at caution over any portion of line where the signaller tells you that there has been a short circuit.	driver	✓							DC 11.3
	<b>9 Track isolating switches and hook switches</b>									
	<b>9.1 Competence</b>									
	You may only operate a track isolating switch or hook switch if you are competent to do so and have the authority of the ECO.	all concerned	✓	✓						DC 10 - HB17 10
	<b>9.2 Operating track isolating switches or hook switches in the correct order</b>									
	The ECO will give instructions to the person operating track isolating switches or hook switches on whether they are to be opened or closed and the order in which they are to be operated.	all concerned	✓	✓						DC 10 - HB17 10
	You must immediately tell the ECO when you have operated any switches.	all concerned	✓	✓						DC 10 - HB17 10
	<b>9.3 Operating switches</b>									
	You must only use the correct tools to operate a switch and its locking device.	all concerned				✓				
	When operating a switch you must make sure it is either fully open or fully closed and properly clamped by the locking devices.	all concerned				✓				
	An open switch does not mean that the conductor rail or the cable attached to it is switched off. All or parts of the switch could still be live.	all concerned				✓				
	You must replace the white sleeve to a normally open hook switch when restoring it to its normal position to prevent it from being operated accidentally.	all concerned	✓	✓						DC 10 - HB17 10



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	Before you authorise the movement of an electric or dual-powered train to a live section from an isolated section or to an isolated section from a live section, you must tell the driver that this will happen.	person authorising the movement	✓	✓						DC 12 - HB17 12
	Before you move an electric or dual-powered train to a live section from an isolated section or to an isolated section from a live section, you must make sure all the collector shoes are raised or secured clear of the conductor rail.	driver	✓							DC 12
	This also applies if an electric train is being hauled or assisted by a diesel locomotive.	driver	✓							DC 12
<b>INFO BOX</b>	For the purpose of this instruction, an electric train does not include a dual-voltage AC/DC traction unit in AC mode with the collector shoes retracted.	driver	✓							DC 12
<b>14</b>	<b>Types of isolation</b>									
	You must consider the CRE to be live unless it has been isolated by one of the following methods: <ul style="list-style-type: none"> <li>Planned isolation (see section 15 of this module).</li> <li>Local isolation (see section 17 of this module).</li> <li>Temporary isolation (see section 16 of this module).</li> <li>Emergency isolation (see section 6 of this module).</li> </ul>	all concerned	✓	✓						DC 8.1; DC 8.2; DC 8.3 HB17 8.1; HB17 8.2; HB17 8.3. (Emergency isolation no longer described as such but is dealt with as an emergency switch off and is shown in DC section 6 and handbook 17 section 6.
	When an isolation has been granted, this does not mean that train running has been stopped. You must get an assurance from the signaller that trains have been stopped.	all concerned	✓	✓						DC 8 note - HB17 8 note.
<b>15</b>	<b>Planned isolation</b>									
	These isolations can only be made on lines which are already protected as shown in module T2 Protecting engineering work or a hand trolley on a line not under possession or module T3 Possession of the line for engineering work.	all concerned				✓				
	They must be planned and granted as shown in Network Rail instructions and only a person who has been trained in those instructions can ask the ECO for this type of isolation.	all concerned				✓				
	You must not allow work to start, which requires an isolation until you have received a conductor rail permit (CRP).	COSS	✓	✓						DC 8.1 (DP) - HB17 8.1
	You must explain the limits of the isolation and any hazards or conditions specified on the CRP to anyone you are responsible for, before allowing them to start work.	COSS	✓	✓						DC 8.1 (DP) - HB17 8.1

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	You must keep the CRP until your group has finished working. You must then immediately return it to the person who issued it.	COSS	✓	✓						DC 8.1 (DP) - HB17 8.1
	If another COSS is to take over from you before the work is completed, you must explain the limits of the isolation and any hazards or conditions to the new COSS. You must then give your CRP to the new COSS.	COSS	✓	✓						DC 8.1 (DP) - HB17 8.1
	If you are the new COSS, you must make sure that you understand the limits of the isolation and any hazards or conditions before taking the CRP.	COSS	✓	✓						DC 8.1 (DP) - HB17 8.1
<b>16</b>	<b>Temporary isolation</b>									
	These isolations must be granted as shown in Network Rail instructions and only to a person who has been trained in these instructions.	all concerned	✓	✓						DC 8.2 - HB17 8.2
	If a temporary isolation is likely to be necessary for an extended time, it must be converted to a planned isolation as soon as possible.	all concerned			✓					
<b>17</b>	<b>Taking a local isolation</b>									
<b>17.1</b>	<b>When a local isolation can be given</b>									
	A local isolation can only be taken where a local isolation instruction has been issued.	all concerned	✓	✓						DC 8.3 - HB17 8.3
	The conductor rail may be isolated by the appropriate switches.	all concerned			✓					
	The isolation must be carried out by an authorised person. However, the authorised person can appoint a competent person to: <ul style="list-style-type: none"> <li>• operate switches</li> <li>• test the conductor rail</li> <li>• short circuit the isolated section.</li> </ul>	all concerned			✓					
<b>17.2</b>	<b>What the local isolation instruction will include</b>									
	The local isolation instruction will show the arrangements to protect the limits of the isolation including: <ul style="list-style-type: none"> <li>• the points or signals worked from a signal box, ground frame or shunt panel</li> <li>• the requirement for the signaller to use reminder appliances and make an entry in the Train Register</li> <li>• the requirement for the ground frame or shunt panel operator to use reminder appliances</li> <li>• any requirement for hand points to be secured.</li> </ul>	all concerned			✓					



# Module DC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	remove / delete	Remarks
	If another person takes over from you, you must make sure that this person understands the extent of the isolation.	authorised person			✓					
	You must make sure that the following are told that another authorised person is taking over from you and the name of the new authorised person: • ECO • The person requiring the isolation • The person in charge of the siding (if necessary).	authorised person			✓					
<b>b) Change of person requiring the isolation</b>										
	If another person takes over from you, you must make sure that this person understands the extent of the isolation and accepts the hazards and conditions shown in the local isolation instructions.	authorised person			✓					
	You must also tell the authorised person the name of the person who is to take over from you.	authorised person			✓					
<b>c) Change to members of the work group</b>										
	If there is any change to the members of the work group, you must make sure that the new member of the group is fully briefed as to the extent of the isolation and hazards before that person is allowed to start work.	person requiring the isolation			✓					
<b>17.5 Cancelling a local isolation</b>										
	You must tell each person you are responsible for to stop work as the isolation is to be cancelled.	person requiring the isolation			✓					
	You must then make and sign a suitable entry in the isolation record book to show that each person has been told and instructed to stop work.	person requiring the isolation			✓					
	You must then: • countersign that entry in the isolation record book • remove the short-circuiting devices.	authorised person			✓					
	You must then tell the ECO that the isolated section can be switched on.	authorised person			✓					
	The ECO will operate the necessary circuit breakers and other equipment and tell you which switches are to be operated.	authorised person			✓					
	When the ECO has given you permission, you must operate and secure the switches in the required position.	authorised person			✓					
	You must operate the switches as shown in section 9 of this module.	authorised person			✓					
	You must tell the ECO when the switches have been operated and secured in the required position.	authorised person			✓					





# Module DC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	remove / delete	Remarks
	The pilotman will make sure that the protection is positioned to prevent an electric train reaching the place where the isolation starts.	all concerned			✓					See / refer to NR Company Standard. NR/WI/ELP/3091 Issue E2.
<b>20.2</b>	<b>Module T2 Protecting activities which affect the safety of trains</b>									
	If the start of the isolation is outside the limits of the T2 protection, the COSS will arrange for a possession limit board (PLB) to be provided to face an approaching train before the start of the isolation, or as close to this as possible, but clear of any line open to traffic.	all concerned			✓					
	On a single or bi-directional line, this protection will be placed at each end of the isolation.	all concerned			✓					
<b>20.3</b>	<b>Module T3 Possession of the line for engineering work</b>									
	If the start of the isolation is outside the point where the detonator protection would normally be placed the PICOP will arrange for the detonator protection to be placed on the approach to the isolation, or as close to this as possible, but clear of any line open to traffic.	all concerned			✓					
<b>21</b>	<b>Isolating sidings where there is no local instruction</b>									
<b>21.1</b>	<b>Arrangements to be agreed</b>									
	These isolations can only be made on sidings which are already protected as shown in module T4 Possession of a siding for engineering work.	all concerned			✓					
	The person in charge (T4) must agree what is necessary with the: • person in charge of the siding • signaller • ECO.	all concerned			✓					
	The following arrangements must be agreed: • The limits of the isolation. • How the isolation is to be protected so that no DC-powered train movements can be made towards it. • The times of the isolation.	all concerned			✓					
<b>21.2</b>	<b>Protection arrangements</b>									
	You must place and keep points in positions to prevent trains entering the area to be isolated. The points must be protected against movement by: • the signaller or operator using reminder appliances if worked from a signal box, ground frame or shunt panel • securing them if they are hand points.	person in charge (T4)	✓	✓						DC 9 - HB17 9

# Module DC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	remove / delete	Remarks
	You must place and keep any points leading to the siding to be isolated in a position to prevent trains entering the siding. You must use appropriate reminder appliances.	signaller	✓							DC 9
	You must then make an entry in the Train Register.	signaller	✓							DC 9
<b>21.3</b>	<b>Arrangements if there are no electric trains in the area to be isolated</b>									
	If you can give an assurance that there are no electric trains in the area to be isolated, the ECO may give permission for the switches to be operated without first opening the circuit breaker.	person in charge (T4)			✓					
<b>21.4</b>	<b>Taking the isolation</b>									
	You must operate switches as instructed by the ECO and as shown in section 9 of this module.	person in charge (T4)			✓					
	You must tell the ECO when the switches have been operated and secured in the required position.	person in charge (T4)			✓					
	You must then test that the electricity is switched off and apply a short circuiting device at the location agreed with the ECO.	person in charge (T4)			✓					
<b>21.5</b>	<b>Before starting work</b>									
	You must tell staff who are to start work the limits of the isolation.	person in charge (T4)			✓					
<b>21.6</b>	<b>When the isolation is no longer required</b>									
	You must tell each person you are responsible for to stop work as the isolation is to be cancelled.	person in charge (T4)			✓					
	You must then remove the short-circuiting device.	person in charge (T4)			✓					
	You must then tell the ECO that the isolated section can be switched on.	person in charge (T4)			✓					
	When the ECO has given you permission, you must operate and secure the switches in the required position.	person in charge (T4)			✓					
	You must operate the switches as shown in section 9 of this module.	person in charge (T4)			✓					
	You must tell the ECO when the switches have been operated and secured in the required position.	person in charge (T4)			✓					
	You must then cancel the protection arrangements.	person in charge (T4)			✓					