Electrical Safety Delivery

Single Approach to Isolations

Electrical Risk Assessment Form – What a Good One Looks Like (WAGOLL)

11/04/2024

Simpler.
Better.
Greener.

The following reference numbers shall be completed:

- Electrical Risk Assessment Form (ERAF) Reference – Unique reference number created by the ERAs completing the ERAF.
- Worksite reference – this may not be known when completing Part 1 but should be completed when known.
- Outage Request Form reference – Record the reference of any Outage Request Forms that are associated with this ERAF.
- Possession reference - this may not be known when completing Part1 but should be completed when known.

The Work Start and End time should reflect the outage request for the work being electrically risk assessed. This will be found on the Outage Request Form or should be requested from the works requestor.
The times can be added later after the FINAL IPF is released – Remember this is a Live document through the planning stages of any work.

NETWORK RAIL ELECTRICAL RISK ASSESSMENT FORM

NR/L3/ELP/SAI25/ERAF Issue 02	Possession ref:	Outage Request Form ref:	Work site ref:	Electrical Risk Assessment Form ref:	Revision
	12546987	569875	6541236	WK01/MDU/Example	1
				If reused, include date from Part 2 of first use:	

Part 1

Part 1(a) – Work assessment and categorisation *(To be completed by the Electrical Risk Assessor)*

Work Requestor name:	Work Requestor's Name	Work Requestor contact number:	Work Requestor's Number

Details of Planned Work

Work start date and time:	Saturday 13/04/24 2200	Work end date and time:	Sunday 14/04/24 0500	Week Number:	1

Nature of planned task(s), task delivery method(s) and access requirements	*(Note: Add references of relevant SSoW and other documents detailing the work to be carried out)*

Downside embankment Vegetation Removal works. Working at height to remove overhanging and future potential overhanging branches and vegetation. Working at height with a MEWP which will be on tracked and travel under live to get to the site of work. Access as per the below. Woodchipper and Kubota/trailers will be also travelled to site (Category L working).

Access and egress arrangements	
On-tracking point(s)	Off-tracking point(s)
Example Coal Yard RRAP G07/10	Example Access RRAP G05/30

Electrical sections, lines affected and associated limits

OLP Along-track limits required		Electrical section(s) required to implement the isolation(s)	Line(s) affected	Electrical section limits	
From	To			Limit structures:	
(Line, Structure Number, Miles, Chains)	(Line, Structure Number, Miles, Chains)			From	To
Up Main G05/24	Up Main G06/01	ELEC/AB/01	Up Main	G05/01	G08/01
Down Main G05/24	Down Main G06/01	ELEC/CD/01	Down Main	G05/01	G08/01
Up Main G07/08	Up Main G07/12				
Down Main G07/08	Down Main G07/12				

Nominated Earthed Isolation provider:	Earthed Iso Provider				
Is this electrical risk assessment form part of a superseding Earthed Isolation?	(Y/N)	N	If yes, provide reference number of related Electrical Risk Assessment Form(s)		

The nature of the task, task delivery method and access requirements should be completed as accurately as possible. This can be found on an Outage Request Form, or from other earthed isolation requesting methods.

Any Category L working that is **associated** with the works should also be mentioned, such as OTP in this case that meets the requirements of ESSOW Category L.

The electrical sections at this stage should only be the electrical sections required to complete the work, nothing more.

If works get combined through in the FINAL IPF, then another ERAF must be completed to combine all of the works with the final electrical sections.

The OLP along-track limits required shall be obtained from any Outage Request Forms received or from the work requestor. This will allow the ERAS to work out which electrical sections are required to implement the Earthed Isolation.

The Nominated Earthed Isolation Provider is the company / department that will be providing the earthed isolation and not necessarily the ERAS completing this form.
It is ideal to have the same company / department completing the electrical risk assessment for the earthed isolation they will provide.

If this electrical risk assessment is part of a superseding sequence, the previous/following ERAFs shall be attached. There must be an electrical risk assessment form for each Form B as part of the superseding sequence.

The top table of this page is the Electrical Safe System Of Work (ESSOW) selection Hierarchy. It is split into the three task delivery areas, on/off tracking at the RRAP, travelling, and the site of work. These can all fall into different or the same ESSOW.

For example the OTP could be on-tracked under an OLP and Earthed Isolation Category A or B, travel under non- earthed OLE using Category D to the site of work 4 miles away, then back into an Earthed Isolation at the site of work Category A or B.

As far as reasonably practicable, Category A should be selected for the task required. If Category A cannot be used, the justification must be provided on the following page.

NETWORK RAIL ELECTRICAL RISK ASSESSMENT FORM

Electrical Safe System of Work (ESSoW) Hierarchy and OTP traveling under Live			
NOTE: Where ESSOW Category L is used in conjunction with another ESSOW from the below hierarchy, the relevant area(s) shall be populated with 'N/A (ESSOW Cat L)'	**RRAP (Y/N or N/A)**	**Travelling (Y/N or N/A)**	**Site of Work (Y/N or N/A)**
1. Can the task be reasonably completed using Category A?	Y	N	Y
2. If the answer to Question 1 is 'No', can the task be reasonably completed using category B?	N	N	N
3. If the answer to Question 2 is 'No', can the task be reasonably completed using category D? *(If a machine requires On/Off Tracking or/and Travelling under Live, obtain confirmation from the E&PME that this is supported at this stage of the planning process.)*	N	Y	N
4. If the answer to Question 2 is 'No', can the task be reasonably completed using category E?			N/A
5. Will an OLP be issued to enable work on a return conductor with the corresponding OLE remaining Live in accordance with the requirements of NR/L3/ELP/SAI25 Module 7?			N/A
If the answer to Question 4 or Question 5 is 'No', the task shall be re-planned.			
If the selected ESSoW category of work is B, D or E* for the 'RRAP', 'Travelling' and/or 'Site of Work', complete Part 1(b) to provide the supporting justification (* Only complete Part 1(b) if the task is not on the approved list of ESSoW category E tasks)			
Is an Earthed Isolation required?		**(Y/N)**	Y
Site visit and electrical risk assessment			
Are any of the electrical sections subject to reduced wire height restrictions? *(If **Yes**, check the machine has been suitably assessed and granted location specific authorisation by the E&PME)*		**(Y/N)**	N
Will a site visit (S) or virtual site visit (V) be required to confirm any details of Part 1 of the Electrical Risk Assessment Form or to complete the electrical risk assessment in Appendix A? *(V) Virtual, (S) Site or (N) Not required*		**(V/S/V&S/N)**	Y
Will a person with a detailed understanding of the work to be carried out accompany the ERAS on the site visit or virtual site visit?		**(Y/N) or N/A**	Y
*(If **No,** provide confirmation below as to how the Electrical Risk Assessor will be able to appropriately consider the work content as part of the electrical risk assessment)*			
Complete the appended electrical risk assessment in draft in Appendix A, identifying the relevant residual electrical hazards and proposed Electrical Risk Control Measures			
With the information available at this stage, can the work be completed safely with the selected ESSOW and proposed Electrical Risk Control Measures?		**(Y/N)**	Y
*(If **No**, the work will need to be re-planned and a different ESSoW shall be selected)*			

The reduced wire height restrictions can be obtained from the local EPME. If the area has a reduced wire height, this must be considered when completing the Electrical Risk Assessment.

If an ERAS is not familiar with the area, they can visit site during the completion of Part 1 of the ERAF if they feel it would be beneficial.

If the Work Requestor cannot send a member of their party during the walkout at any time during the ERAF completion, then an appropriate justification must be provided as to how the ERAS will get the required information to complete the ERAF.

Question 5 is if a Return Conductor only Authority is required.

(The RC cannot be isolated; therefore, it is an RC Authority not Isolation).

An Earthed Isolation will be required if any of the above task delivery areas is a Category A or B.

At this stage Appendix A (Residual Electrical Hazards and Electrical Risk Control Measures) can be DRAFTED and then completed as part of Part 2 of the ERAF.

Once drafted, the work location shall be assessed with the Electrical Risk Control Measures and the ERAS shall ensure that the work is safe to continue.

Part 1(b) shall only be completed if the ESSOW is anything other than Category A.

If this is the case, then a justification must be provided as to why it is unreasonable to work with all conductors isolated and earthed. This is to conform with the Electricity at Work Regulations 1989.
The three task delivery areas are listed at the top and three justification elements are listed to justify working without all conductors isolated and earthed.

Nature of the work: This element is where the OLE must be kept live to complete works such as section proving. Therefore, an ESSOW category A is not suitable.

Safety Impact: Sometimes there can be a safety impact by implementing a larger Category A Earthed Isolation rather than a smaller Category B Earthed Isolation for just where the work is required.

An example would be more boots on ballast and risk due to more earthing, or disconnection activities and more driving time for longer Earthed Isolations which may lead to higher fatigue than necessary. That is the case for this example shown.

Another example would be incident response. It may be unreasonable to isolate and earth all four lines to create a Category A ESSOW to remove debris from the OLE, this leads to cancelled trains, overcrowding etc when a ESSOW Category E may be sufficient with approved Live Line Equipment.

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Part 1(b) – Justification (To be completed by the Electrical Risk Assessor. Where relevant, Part 1(b) shall be completed to separately record the justification for the ESSoW at the Site of Work and the ESSoW for travelling to the Site Work) - (Complete for any ESSOW other than Category A)

Justification Elements		RRAP (Y / N / N/A)	Travelling (Y / N / N/A)	Site of Work (Y / N / N/A)	Elements to consider
Nature of the work	Does the equipment need to be Live to complete the work?			N/A	*- Testing for example: Section B74*
Economic impact	Does a lack of all line Earthed Isolation opportunities prevent the work from being carried out under category A?	N/A	N	N/A	*- Does the available access arrangements mean that it is not reasonable to schedule the work to allow completion under category A?* *- Is it unreasonable, or not possible, to postpone the work to allow completion when the access required to allow completion under Category A is available?* *Note 1: In many cases, the lack of available infrastructure access and the inability to postpone the work until ESSoW Category A can be implemented, will form the basis of the justification case.* *Note 2: The ERAS can consult the Route Isolation Planner to confirm the available access arrangements if clarification is required.* *Note 3: It is important to demonstrate that consideration was given to confirming if it is possible to complete the work under ESSoW Category A within the available access arrangements and to record the justification where it is not deemed to be achievable within the available access arrangements.*
Safety impact	Are the benefits of adopting ESSoW category A outweighed by the risks created through implementing an all line Earthed Isolation?	N/A	Y	N/A	*Workforce Safety for example:* *- Does ESSoW category A lead to more driving, more 'On or Near the Line' working and/or more manual handling?* *Passenger Safety for example:* *- Overcrowding;* *- Public disorder/abusive behaviour towards workforce;* *- Public stranded on sealed trains etc.* *Safety of wider infrastructure for example:* *- The non-availability of ESSoW category A within suitable timescales may reduce access times leading to increased risk of infrastructure failures, operational incidents and close calls etc.* *- The time taken to implement ESSoW category A may reduce access times leading to increased risk of infrastructure failures, operational incidents and close calls etc.*

	Justification element	Justification and related detail
RRAP		
Travelling	Safety Impact	The risk to earth up the OLE area for just travelling of OTP is higher than travelling under live with authorised OTP
Site of Work		

Electrical Risk Assessment Form Part 1 – Validation: The ERAS who signs below is responsible for the full completion and content of Part 1 of this ERAF.

Electrical Risk Assessor (ERAS)			If this ERAF is to be reviewed by an ERAR, select the reason below:	*Electrical Risk Assessment Reviewer (ERAR)*		
	Prepared by:	ERAS 1			Reviewed by:	ERAR 1
	Signature:	ERAS 1 signature			Signature:	ERAR 1 signature
	Sentinel number:	ERAS 1 Sentinel	On/Off tracking/travelling under live (Not Category L)		Sentinel number:	ERAR 1 Sentinel
	Date:	04/04/2024			Date:	04/04/2024

Economic Impact: It is not possible to isolate and earth the entire railway every time we want to do some work, therefore it is acceptable to work ESSOW category B or lower on the hierarchy with a justification where it is not possible to isolate all lines within the along track limits of an OLP.

If the work requires all lines isolated and earthed, then the work should be replanned under ESSOW category A when all lines isolated is next available.

To find out whether isolating all line is possible, the best ESSOW, then the route isolation provider can be contacted, or asked during isolation planning meetings.

Where a justification is selected above, the explanation must be written here.

Once the information in Part 1 is complete and the Appendix A has been drafted, an ERAS shall sign to confirm the completion of this part of the risk assessment

If the electrical risk assessment includes areas of heightened risk (this is a drop-down list, and requirements for review are in NR/L3/ELP/SAI25 Mod 2) then the ERAF must be reviewed by an ERAR. If any of the requirements apply and an ERAR has not signed the ERAF, the electrical risk assessment is invalid!

Part 2 is to be completed as close to the Earthed Isolation as possible to ensure the information is accurate for the work activities to go ahead. The Isolation Planning Form (IPF) will be released in the FINAL version which will provide the 'actual' Earthed Isolation that will be implemented from the work requests in PPS.

Part 2 includes the site visit to verify Designated Earthing Point Locations and the Bonding associated with these. Also, Part 2 includes details of machines that may be required and any on/off tracking details/site access requirements for machines. Finally, Overhead Line Permits shall be detailed from the IPF.

Part 2(a) only needs to be completed if the Electrical Sections detailed in the IPF adapt/change the works drafted in Part 1(a).

If the electrical sections/subsections that are planned within the FINAL issue of the IPF and every electrical section/subsection in Part 1(a) falls within this, there is no need to complete Part 2(a).

If only some of the electrical sections/subsections required to complete the work within Part 1(a) are planned within the final issue of the IPF/OPF, then Part 2(a) needs to be completed with the new electrical sections/subsections required to complete the work and the revised OLP along-track limits that can be issued at the time of the earthed isolation.

Also, if any of the work content has changed/adjusted/cancelled then this needs to be documented here along with any revised on/off tracking points for On Track Plant.

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NETWORK RAIL ELECTRICAL RISK ASSESSMENT FORM

NR/L3/ELP/SAI25/ERAF Issue 02	Possession ref:	Outage Request Form ref:	Work site ref:	Electrical Risk Assessment Form ref:	Revision
	12546987	569875	6541236	WK01/MDU/Example	1

Part 2 - Completed as close to the Earthed Isolation as possible

Part 2(a) – Implementation details (To be completed by the Electrical Risk Assessor)

Complete only if different from that listed in Part 1

Details of Planned Work

Work Requestor name:	Work Requestor's Name	Work Requestor contact number:	Work Requestor's Number

Details of Planned Work

Work start date and time:	Saturday 13/04/24 2200	Work end date and time:	Sunday 14/04/24 0500	Week Number:	1

Nature of planned task(s), task delivery method(s) and access requirements *(Note: Add references of relevant SSoW and other documents detailing the work to be carried out)*

Downside embankment Vegetation Removal works. Working at height to remove overhanging and future potential overhanging branches and vegetation. Working at height with a MEWP which will be on tracked and travelled under the earthed isolation due to shortening back of the isolation. Access as per the below. Woodchipper and Kubota/trailers will be also travelled to site (Category L working).

Access and egress arrangements

On-tracking point(s)	Off-tracking point(s)
Example Access RRAP G05/30	Example Access RRAP G05/30

Electrical sections, lines affected and associated limits *(Complete only if different from that listed in Part 1)*

OLP Along-track limits required		Electrical section(s) required to implement the isolation(s)	Line(s) affected	Electrical section limits	
From	To			Limit structures:	
(Line, Structure Number, Miles, Chains)	(Line, Structure Number, Miles, Chains)			From	To
Up Main G05/24	Up Main G06/01	ELEC/AB/01	Up Main	G05/01	G08/01
Down Main G05/24	Down Main G06/01	ELEC/CD/01	Down Main	G05/01	G08/01

Nominated Earthed Isolation provider:	Earthed Iso Provider

This page is in a different colour to represent what could happen if the FINAL IPF cuts the work area short from what was drafted in Part 1(a).

This information is not followed in the rest of the example. This example complete ERAF is based on the information drafted in Part 1.

Part 2(c) is the Overhead Line Permits (OLP)s and any other safety documents that are to be issued at the time of the Earthed Isolation. This information can be obtained from the final of the IPF and cross checked with the Outage Request Forms received from any work requestors.

Remember, the OLP along-track limits must fall within the initially planned OLP along-track limits in Part 1(a) or adjusted due to the IPF/OPF output in Part 2(a), this is essential.

The site of work details should detail as a good example but not limited to:

- which ESSOW is the Earthed Isolation,
- which lines are isolated and earthed,
- any key Residual Electrical Hazards associated with the OLP along-track limits
- any key electrical risk control measures associated with the OLP along-track limits
- Any on/off tracking points for OTP.

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Part 2(b) – On/Off Tracking or/and Travelling under Live ((if applicable) to be completed by the Electrical Risk Assessor with support from the Work Requestor)

Will there be any on/off tracking or travelling under Live? (*If the answer is No continue to 2(c), If the answer is Yes complete 2(b)*)	(Y/N)	Y
At the location for On-Tracking stated in 1(a) or 2(a), is the approach to track level?	(Y/N)	Y
At the location for Off-Tracking stated in 1(a) or 2(a), is the exit from track level?	(Y/N)	Y

What is the minimum wire height at the access? (mm)	4126	Location (ELD, Mileage, OLE Structure Number)	EXP, 7M10ch G07/10
What is the minimum wire height through the distance travelling under LIVE? (mm)	4126	Location (ELD, Mileage, OLE Structure Number)	

Machine Type	Machine Supplier	12 Digit Number	ECC reference	MLD (Y/N)	OTP Max Height (mm)	Standing Surface Max Height (mm)	Comments
MEWP	Supplier 123	123456789120	ECC 13	Y	MEWP max	MEWP standing	

ELR	Lines Affected	Start Mileage	End Mileage	Start OLE Structure	End OLE Structure
EMPLE	Up Main	07M/10ch	05M/50ch	G07/10	G05/30
EMPLE	Down Main				

Electrification and Plant Maintenance Engineer or Delegated Authority: I confirm that I have reviewed and approve the on/off tracking and/or travelling activities stated above.

Endorsed by:	E&PME Example	Signature:	E&PME Example	Sentinel number:	E&PME Sentinel	Date:	11/04/2024

Part 2(c) – Electrical Safety Document details (to be completed by the Electrical Risk Assessor)

COSS (OLP) Name	OLP along-track limit structures: From	To	Line(s) / ATF / RC	Issue at Site of Work?	Are Test Before Touch actions required?	Work content
COSS OLP1	G05/24	G06/01	Up Main	N	Y	De-Vegetation works
	G05/24	G06/01	Down Main			
COSS OLP1	G07/08	G07/12	Up Main	N	Y	On tracking the MEWP
	G07/08	G07/12	Down Main			

Site of Work details (Description of the Site of Work, Site of Work boundaries including vertical boundary)

2 OLPs to be issued to the same COSS (OLP). One for the on tracking of a MEWP and then MLD applied before travelling to the site of work.
Site of work is on the embankment of the Downside CESS to remove potentially overhanging branches. Both lines isolated and earthed for access with no vertical boundary at the site of work.

Part 2(b) is the On/Off Tracking and Travelling under Live declaration. If an electrical risk assessment includes the On/Off Tracking or Travelling under Live/de-energised OLE, then Part 2(b) must be completed (ESSOW Category D)

Part 2(b) replaces the F0462 form that is currently used under 29987. Therefore, only this section needs to be completed, and approved by the E&PME or Delegated Authority to allow OTP to On/Off Track or Travel under live/de-energised.

The Machine Controller must have a copy of the ERAF when they On/Off Track or Travel under live/de-energised. Therefore, once the ERAF is completed, it must be sent to the Machine Controller or planner/coordinator of the works (to pass to the machine controller) before the shift they can receive the correct information.

Site of work details requires any additional information about the OLP along track limit sites of work.

Imagine a box around the site of work, are there any hazards that need to be emphasised along track, across track, or vertically above the site of work?

It is advised to attach drawings or schematics for the Earthed Isolation showing Electrical Risk Control Measures and any other vital information to help the Nominated Person implement the Earthed Isolation.

Waiving the visit to site is decided by the ERAS, however the decision must be reviewed by an ERAR.
This is for circumstances such as, but not limited to:

- Earthed isolation is at a previous site of work which is known not to have changed.
- Earthed Isolations where the site of work is familiar with the ERAS/NP.

This question is the final check of the document to review the electrical risk control measures against the work activity to ensure they are suitable for the task.

The ERAS and ERAR (If applicable) sign Part 2 Validation and a copy is given to the Nominated Person to implement the Earthed Isolation.

All forms, including non-completed forms, are to be retained after use and stored along with the Network Rail's retention policy.

NETWORK RAIL ELECTRICAL RISK ASSESSMENT FORM

Part 2(d) – Confirmed Electrical Risk Control Measures		
Finalise and record risks and associated Electrical Risk Control Measures in appended risk assessment, append the referenced generic risk assessment or existing risk assessment		
Are the required Electrical Risk Control Measures identified and recorded in the appended Electrical Risk Control Measures Appendix A?	(Y/N)	Y
Are drawings, diagrams or sketches included as part of this electrical risk assessment?	(Y/N)	N
Is there a requirement to inspect the Electrical Risk Control Measures? If 'Yes', provide the details in the Electrical Risk Control Measures table in Appendix A. If 'No, provide justification below:	(Y/N)	Y
Will the integrity and continuity of existing electrical circuits, including bonding, be affected by the planned tasks? *If* ***Yes,*** *describe the measures to be taken to mitigate the hazards in accordance with the requirements of NR/L3/ELP/21085:*	(Y/N or N/A)	N
Has the site visit been waived? *(If* ***Yes****, and this is not ESSoW Category A, provide a justification of why a site visit is not required below, which shall be reviewed by an Electrical Risk Assessment Reviewer.)* NOTE: A site visit shall not be waived for On-Track Plant activites as specified in NR/L2/RMVP/0200/P501.	(Y/N)	N
Can the work be completed safely with the proposed Electrical Safe System of Work and Electrical Risk Control Measures in place? (If No, detail below the action required to replan the task)	(Y/N)	Y

Short notice Earthed Isolations: Guide questions - This section shall be completed for short notice Earthed Isolations only in accordance with the requirements of NR/L3/ELP/SAI25 module 2		
Has the appropriate Electrical Safe System of Work been selected from the hierarchy in accordance with the requirements of NR/L3/ELP/SAI25 module 2?	(Y/N)	
Have all electrical hazards and residual electrical hazard been identified?	(Y/N)	
Are the Electrical Risk Control Measures identified suitable and sufficient?	(Y/N)	
Are the necessary competences and resources available to complete the task(s) required?	(Y/N)	

Electrical Risk Assessment Form Approval: The ERAS who signs Part 2 accepts overall accountability for this Electrical Risk Assessment and ESSoW.

Prepared and approved for use by:	ERAS 1	If this ERAF is to be reviewed by an ERAR, select the reason below:		Reviewed by:	ERAR 1
Electrical Risk Assessor (ERAS) — Signature:	ERAS 1 signature	On/Off tracking/travelling under live (Not Category L)	*Electrical Risk Assessment Reviewer (ERAR)* — Signature:		ERAR 1 signature
Sentinel number:	ERAS 1 Sentinel		Sentinel number:		ERAR 1 Sentinel
Date:	12/04/2024		Date:		12/04/2024

Where an ERAF is completed for a short notice ESSOW (post Emergency Switch Off) then the guide questions must be answered by the ERAS. This is to ensure that the entire ERAF has been completed comprehensively with nothing missed. It is also an opportunity to check the details raised within the electrical risk assessment to ensure they are suitable and sufficient.

Part 2(d) is all about the Electrical Risk Control Measures to mitigate any Residual Electrical Hazards within the Earthed Isolation.

At this stage, the first task is to complete the already drafted Appendix A from Part 1(a) and any adjustments that need to be made due to the output of the IPF/OPF shall be amended.

Once that has been completed a series of questions follow to ensure that the planned (originally or adjusted for Part 2(a)) Electrical Risk Control Measures successfully cover the work, inspection frequencies of Electrical Risk Control Measures and also if there are any requirements to alter the integrity of any electrical circuits through bonding because of re-railing for example.

The ERAS that signs Part 2 of the ERAF is the person signing off the whole document for use. Therefore, this ERAS is overall accountable for the content within the ERAF.

Remember an ERAR holds no accountability and are just to review the ERAF and question the ERAS on their decisions.

Appendix A, as stated previously, is drafted within Part 1 of the ERAF for the electrical sections required and completed in Part 2 with the electrical sections published in the final IPF.
Appendix A states all the Electrical Risk Control Measures and the Residual Electrical Hazards they are mitigating against. This page is for the ERAS who completes Part 2 of the ERAF, to score whether the Residual Electrical Hazard has been successfully reduced to an acceptable level by the associated Electrical Risk Control Measure.

If the electrical sections in Part 1(a) of the ERAF did not change in Part 2(a) of the ERAF when the FINAL IPF is released, then this should have the correctly drafted and planned Electrical Risk Control Measures as initially planned and all risks mitigated successfully. If the Part 2(a) of the ERAF differs from Part 1(a) then, the Electrical Risk Control Measures may need to be adjusted and more Residual Electrical Hazards may be introduced due to the change to the earthed isolation in the Final IPF. This needs to be scored to understand if these new risks are reduced to an acceptable level with the with Electrical Risk Control Measures.

The risk assessment guidance is to aid the assessment of Residual Electrical Hazards and the Electrical Risk Control Measures protecting them.

To confirm whether the risk from the hazard is acceptable, it must be assessed against the 'Likely and Acceptable' or 'Unlikely and Unacceptable' scoring guidance.

If any of the Residual Electrical Hazard risk levels are determined to be unacceptable, then the work shall be re-planned or further Electrical Risk Control Measures must be applied to reduce the risk to an acceptable level.

Remember Residual Electrical Hazards can have **MORE** than one Electrical Risk Control Measure. Sometimes this is the only way to protect against high-risk hazards.

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Appendix A - Electrical risk assessment (to be completed by the Electrical Risk Assessor)

Risk assessment guidance

1	Having selected the ESSoW category of Work that will be applied, identify all of the residual electrical hazards that remain. (Even when applying category A there could be still be the possibility that persons may accidentally stray out of the area covered by the OLP.) Please refer to NR/L3/ELP/SAI25 module 2 for more information.
2	List the identified residual electrical hazards in the risk assessment schedule.
3	If any risk level remains 'unacceptable', even with the proposed additional control in place, the work shall not proceed. The planning of the work shall be re-evaluated to facilitate delivery enabling a suitable level of risk mitigation.

Scoring guidance

How likely is it that compliance with the specified restrictions for the 2.75 m zone, Live zone will be achieved?

Likely	There are **sufficient** controls in place to achieve this, and either all of them would need to fail, or a person would have to deliberately breach the controls	**Acceptable**
Unlikely	There are **insufficient** controls in place to achieve this, and a simple misunderstanding, or a person experiencing a momentary distraction or lapse of attention could cause them to fail	**Unacceptable**

Risk assessment

Hazard ID	Residual Electrical Hazard				Electrical Risk Control Measure(s)	Inspection required? (Yes or No)	Notes (including the frequency of inspection where required)	Is the risk from this hazard acceptable	
	Description	Line	From / At	To				Yes	No
1	OLP Along track limits	Up Main	G05/24	G06/01	Aerial RoLE	N		Y	
2	OLP Along track limits	Down Main	G05/24	G06/01	Aerial RoLE	N		Y	
3	OLP Along track limits	Up Main	G07/08	G07/12	Aerial RoLE	N		Y	
4	OLP Along track limits	Down Main	G07/08	G07/12	Aerial RoLE	N		Y	
5	Live OLE above MEWP	Down Main	G07/08	G06/01	MLD configured	Y	Before and whilst travelling	Y	
6									
7									
8									
9									
10									
11									
12									
13									

Appendix B is not a requirement for the completion of the ERAF, however may be useful to note down earth locations and any affected bonding whilst completing an electrical risk assessment.

Appendix B can be used to record information from the site walkout such as, DEP Details, Bonding affected by any works to be undertaken and finally any Manual Lineside Disconnectors to be operated as part of the Earthed Isolation.

When the ERAS completes Part 1 and 2, they should reference Appendix A and B (if used), however these can be adapted throughout the ERAF completion. This is why they are appendices and not part of Part 1 or Part 2 of the ERAF.

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Appendix B - Relevant information for the site walkout
Completion of Appendix B is not a requirement for the authorisation of the Electrical Risk Assessment Form

DEP Details

Structure number	Line(s)	OLE (CME/AE/CJ)	RC (AE)	ATF (CME/AE/CJ)	EAP intact	DEP bond Intact	Comments
G07/07	Down & Up Main	CME			Y	Y	
G07/13	Down & Up Main	CME			Y	Y	
G07/07	RC Down & Up side		AE x 2		Y	Y	
G07/13	RC Down & Up side		AE x 2		Y	Y	
G06/02	Down & Up Main	CME			Y	Y	
G06/02	RC Down & Up side		AE x 2		Y	Y	
G05/33	Down & Up Main	AE			Y	Y	
G05/33	RC Down & Up side		AE		Y	Y	
G05/23	Down & Up Main	CME			Y	Y	
G05/23	RC Down & Up side		AE x 2		Y	Y	

Bonding affected by the works

Structure number	Line(s)	Description

Manual lineside Disconnectors to be operated

Disconnector designation	Structure number	Line	Open / Close / Alternate / Earth	Key type and location	Access / location

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Any questions?

For more information, please visit

Electrical Safety - Safety Central (networkrail.co.uk)

or contact the team

ESDCommunication@networkrail.co.uk