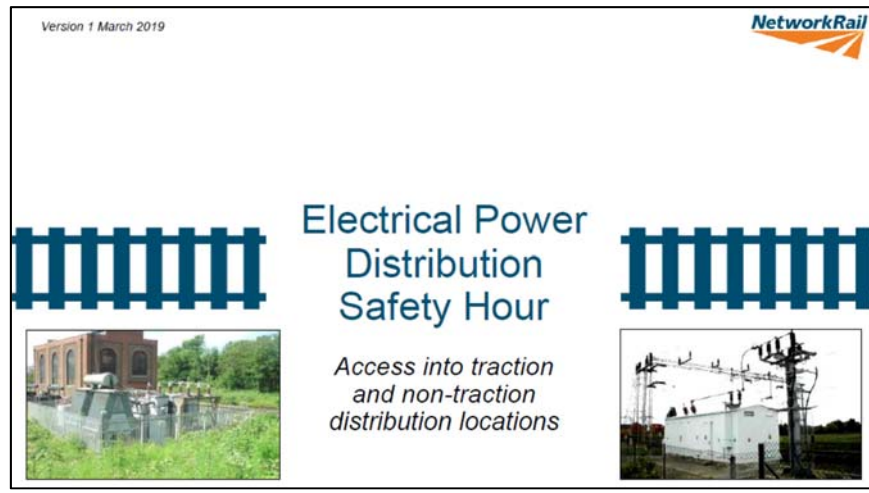


# Electrical Power Distribution Safety Hour and Sentinel Brief

## Facilitator Guidance



This guidance has been created to assist facilitators in delivering this national safety hour and Sentinel brief. It is targeted at all holders of DIST Level A,B and C holders and must be completed by 29<sup>th</sup> July 2019. A competence event has been created in Sentinel to record the briefing.

This pack contains images of the slide deck and includes guidance plus speaker notes to supplement the slide content.

### BEFORE YOU BEGIN

1. Print a copy of the Distribution SENSES poster (A3) for participants to view
2. Print a copy of the following National safety document:
  - NRB 19/01 – safety bulletin - Electrical fire staff injury
3. Print the slides and this facilitator guide which also contains a set of FAQs
4. Print the attendance form

**Please prepare for this session carefully.**

**Please personalise this with your own thoughts and experiences to give this session personal meaning.**

***Your personal commitment and leadership will be key to the success of this safety hour.***

### AFTER the SESSION

Please record attendance at your session using the form that is also available on the Safety Central page. A copy of the signed attendance form should then be submitted to your Competence Delivery Specialist (or equivalent) so that oracle / sentinel can be updated. The

attendance form must be retained for the next 12 months or in accordance with your local arrangements.



## Slide 1 - welcome & scene setting

### FACILITATOR INSTRUCTIONS


- This session will take around 90 minutes (*this allows 30 minutes for the Level C re-briefing to be undertaken*).
- Discussion activities with your team are denoted at the top of the slides by this icon:




Throughout this presentation, **speaker points will be marked in BOLD** (i.e. script/notes for you to talk through in your team session) **AND general guidance/instructions in non-BOLD**

**A set of Frequently Asked Questions are contained from page 24 onward, at the end of these facilitator's notes.**

**It would be advisable to have these readily available throughout the session.**



# Contents



Where you see this icon at the top of slide, it denotes a team discussion

**Section 1 – Safety Hour:**

- Introduction and purpose of the session
- Overview of the incident at Godinton Substation in December 2018
- Accessing distribution locations Discussion topics
- Arc Flash PPE

**Section 2 – Sentinel Competence Re-brief:**

- Re-briefing on the Safety Requirements for Accessing Distribution sites (mandatory for all Level A, B, C competence holders)

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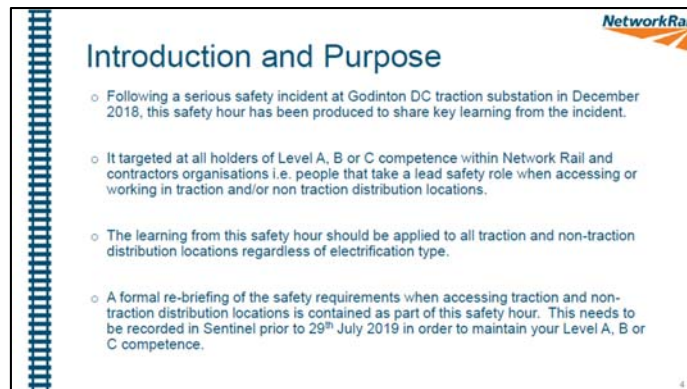
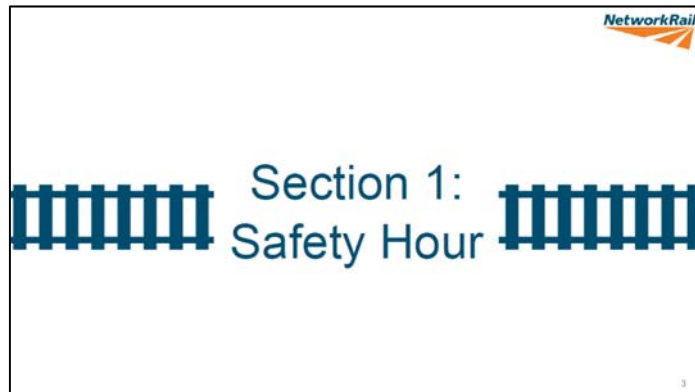
## Slide 2 – contents

### FACILITATOR INSTRUCTIONS

- Start your session by talking through the contents with your team and explain there will be team discussion sessions when indicated.

### Points to say:

- 1. The purpose of this session is to help understand safety behaviour and culture in our teams, improve risk awareness and what actions we need to take to improve safety when working in traction and non-traction distribution locations.**
- 2. We want to talk about the initial findings and learning from the Godinton DC substation accident in December 2018.**
- 3. We also want to confirm understanding of the actions to be undertaken when accessing a traction or non-traction distribution location.**
- 4. We will have a team discussion - where we can learn together, share and address any concerns or seek clarification**



Slide 3 & 4 – Safety Hour Introduction

Points to say:

- 1. This is a safety hour briefing targeted at all holders of DIST Level A,B and C competence. This briefing applies to both NR staff and our contractors.**
- 2. We will talk more about the Godinton DC Substation incident in the following slides.**
- 3. The learning from Godinton is to be applied to all distribution locations (i.e. AC traction, DC traction, High Voltage Non-Traction locations) where Level C competence and above is required to access.**
- 4. Following the briefing, your Line Manager / Competence Delivery Specialist will update your competence profile in oracle/sentinel to reflect that you have received this.**

**Godinton Incident**

- Members of the Distribution & Plant team were responding to a fault where a dc circuit breaker had failed to reclose following a tripping.

- Upon arrival, steam was reported to be present inside the DC substation.

How do you and your team respond to situations involving faults?

What actions would you take if you discovered the environment in a distribution location wasn't normal?

Describe what could happen if steam or condensation is present in a distribution location?

## Slide 5 – Godinton Incident

Points to say:

- Members of the distribution & Plant team were responding out of hours (i.e. on-call) to a DC circuit breaker fault.**

Team Discussion Question: ***How do you and your team respond to situations involving faults?***

- Are you more vigilant?*
- Do you feel more under pressure?*
- Are you anxious?*

- Upon opening the substation door, it was reported that the inside of the substation there appeared to be a large amount of steam.**

Team Discussion Question: ***What actions would you take if you discovered the environment in a distribution location wasn't normal?***

- Would you escalate and to whom before proceeding?*
- Would you proceed with the intended task?*
- Would you risk assess before proceeding?*

Team Discussion Question: ***Describe what could happen if steam or condensation is present in a distribution location?***


- Electrical equipment could start to fail due to electrical breakdown?*
- Dangerous touch potentials should be present on electrical equipment?*
- Increased risk of electrical flashover?*

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## Godinton Incident

- Once the steam had dissipated, an attempt was made to replace a blown 750V 2A DC fuse within the 750V DC switchboard. An electrical flashover occurred as a result.
- Our colleague suffered serious injuries from the flashover.
- The substation and other parts of the traction power system nearby were substantially damaged by the fire that resulted.
- An investigation is on-going

What could be the consequences of an electrical flashover?



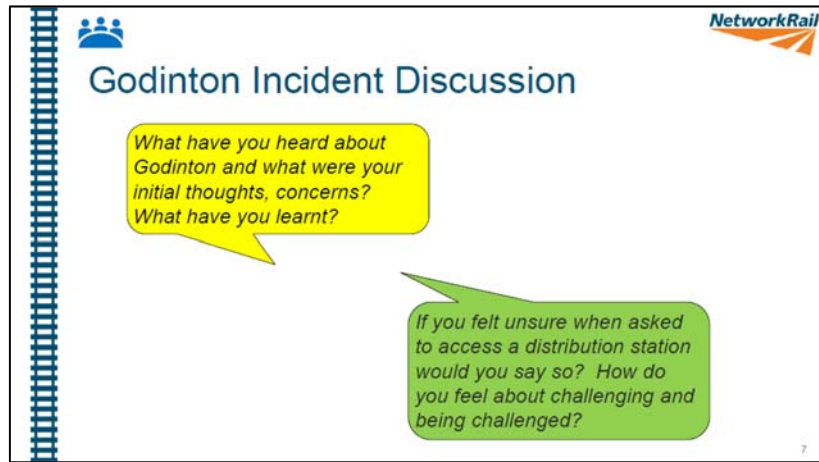
## Slide 6 – Godinton Incident

Points to say:

1. **Once the steam had dissipated, an attempt was made to replace a blown 750V 2A DC fuse within the DC switchboard. An electrical flashover occurred as a result.**

Team Discussion Question: ***What could be the consequences of an electrical flashover?***

- *Life changing injuries to the individual(s) due to severe burns*
  - *Electric shock or electrocution*
  - *Catastrophic failure of electrical equipment?*
  - *Fire?*
  - *Equipment damage?*
2. **The flashover causes severe burns to the member of the D&P team which has required the individual to receive treatment from a specialist burns centre.**
  3. **The fire that had been caused by the flashover then continued to substantially damage the substation until all DC traction current could be discharged and the emergency services allowed on site. This incident also caused damage to other traction power infrastructure which was nearby.**
  4. **The investigation into this incident is on-going.**



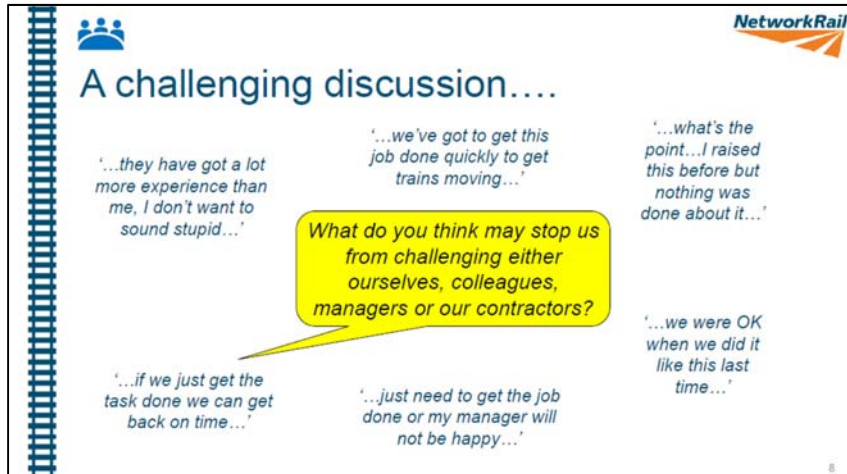
## Slide 7 – Godinton Incident Discussion

Team Discussion Question: ***What have you heard about Godinton and what were your initial thoughts, concerns? What have you learnt?***

- *How have you been made aware of the recent safety bulletins?*
- *How you been briefed on the safety bulletins?*
- *Did you hear about the Godinton incident before the safety bulletins were issued?*
- *Did you expect another means of communication?*
- *Does this apply to any of the distribution locations in my area?*
- *Do I need to change my work practices?*
- *Does any of my distribution locations have water ingress? And how would I find out?*

Team Discussion Question: ***If you felt unsure when asked to access a distribution substation would you say so? How do you feel about challenging and being challenged?***

- *What would stop you entering a distribution substation?*
- *How would you feel about being challenged by a fellow colleague, friend or family member?*
- *Do you feel comfortable and confident to challenge individuals?*
- *Has this incident raised any challenges in the way you now access distribution substations?*



## Slide 8 – A Challenging Discussion

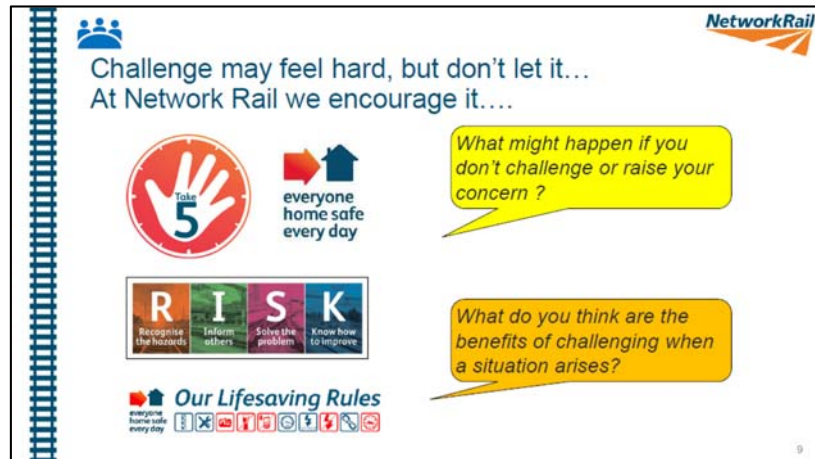
### FACILITATOR INSTRUCTIONS

- Invite your team to discuss the question raised. A further click on the mouse will allow the examples to appear to aid the discussion. Ask the team if they have experienced any of the above examples before challenging.

Team Discussion Question: ***What do you think may stop us from challenging either ourselves, colleagues, managers or our contractors?***

- *I don't want to upset them*
- *They are my friend outside the work environment*
- *I don't want to appear stupid or be labelled as a trouble maker*
- *I need this job to support my family so don't want to jeopardise that*
- *I don't want them to find out that I haven't been listening or understanding*
- *I don't want to make the task longer and people late home*
- *I don't want the blame for delaying trains*
- *I haven't got the confidence to challenge, especially if they then challenge me back*





## Slide 9 – Take 5 and think RISK

Points to say:

**If we are unsure about any aspect of the task, then TAKE 5 to re-assess or challenge. Apply the R.I.S.K principles and follow the relevant Life Saving Rules.**

**You might not be able to solve the problem, but you have recognised a hazard, so you can certainly inform others to take forward.**

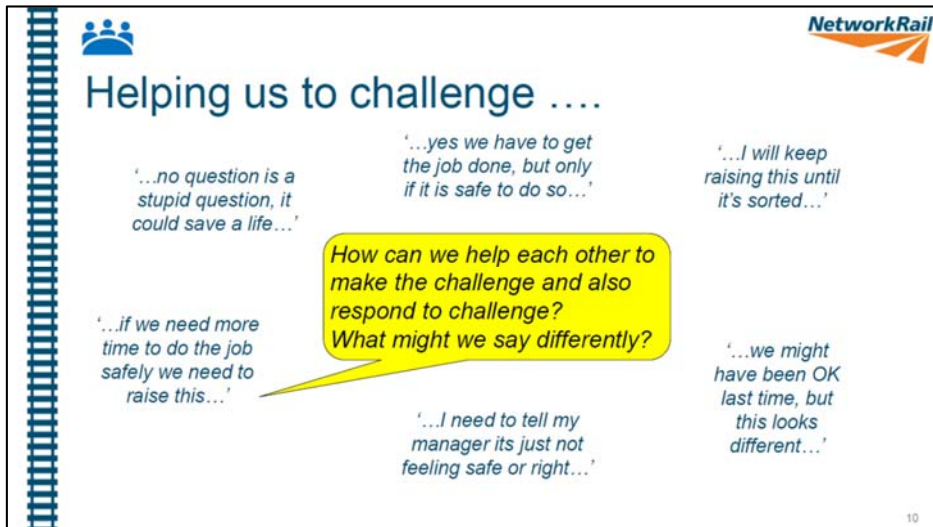
**This will lead to improved safety culture.**

Team Discussion Question: ***What might happen if you don't challenge or raise your concern?***

- *You might continue to work unsafe*
- *You might be leading others to work unsafe*
- *An incident may occur*
- *Improvements required to procedures / risk controls and mitigation will not be raised*

Team Discussion Question: ***What do you think are the benefits of challenging when a situation arises?***

- *You remain safe*
- *You may be ensuring that others remain working safe*
- *The work is stopped or amended before an incident could have occurred*
- *Improvements to procedures / risk controls and mitigation will be acted upon and implemented*



## Slide 10 – Helping us to challenge

### FACILITATOR INSTRUCTIONS

- Invite your team to discuss the question raised. A further click on the mouse will allow the examples to appear to aid the discussion. Ask the team if they have experienced any of the above examples before challenging.

Team Discussion Question: ***How can we help each other to make the challenge and also respond to challenge? What might we say differently?***

- *Present an open environment for questions or challenges to be raised*
- *Encourage individuals to speak up*
- *Encourage that their views and contributions are valued*
- *The individuals will not be judged on their views or contributions*
- *We can only have an improved safety culture if we are aware of your safety issues or concerns*

**Accessing distribution locations**

Following the findings from the Godinton incident, a national safety bulletin was issued in January 2019.

What have you understood from the national safety bulletin?  
How do the requirements affect your teams or method of work?

[Link to National Safety Bulletin NRB 19/01](#)

## Slide 11 – Accessing distribution locations

### FACILITATOR INSTRUCTIONS

- Circulate a copy of the national safety bulletin NRB 19/01 around the team to view.
- A link to the safety bulletin on Safety Central has been provided.

### Points to say:


1. **Two South East route based technical bulletins were issued immediately following the Godinton incident. The national safety bulletin followed then these and after the initial findings from the investigation were known and assessed for national implementation.**
2. **The national safety bulletin applies to all traction and non-traction distribution locations (regardless of electrification type).**

#### *Examples of traction distribution locations:*

- *25 kV Traction – Feeder Stations, Mid-Point Track Sectioning cabin / location, Intermediate TSC/TSL, Auto Transformer Feeder station, etc.*
- *DC Traction – DC Substations, Switching Stations, Track Paralleling Huts, Feeder huts, etc.*
- *Non-Traction – High Voltage non-traction distribution substations feeding depots, stations or non-traction supplies such as signalling power.*

#### **Team Discussion Question: *What have you understood from the national safety bulletin? How do the requirements affect your teams or method of work?***


- *What do you understand is required if steam is present within a distribution location?*
- *What do you understand is required if significant damp or condensation is present within a distribution location?*
- *What actions would you take if you were unsure?*
- *Do you know any distribution locations where the fore-mentioned conditions are present? How would your actions now change when accessing these locations?*
- *Do you know the requirements when working in a MM74 DC circuit breaker cell?*



## Discussion 1

Picture a scenario where you are about to take someone under your care, or maybe a new starter who has never been on the railway infrastructure before, into a traction or non-traction distribution location

*What would you tell them to make sure they are safe?*



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## Slide 12 – Discussion 1

Set the scene:

**Picture a scenario where you are about to take someone under your care, or maybe a new starter who has never been on the railway infrastructure before, into a traction or non-traction distribution location**

Team Discussion Question: ***What would you tell them to make sure they are safe?***

- *What is a distribution location and the equipment contained within?*
- *Where the high voltage elements are and how you are protected from touching energised components?*
- *A place of safety to go if an incident occurs?*
- *Access and egress points to both the substation building and the compound?*
- *What not to touch?*
- *Nearest hospital?*
- *Emergency contact details and method of?*
- *Any other hazards?*

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## Discussion 2

What do you think are the personal factors that should also be checked before accessing or undertaking a task in a distribution location?

What do you need to know before you enter - who could tell you?

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### Slide 13 – Discussion 2

Team Discussion Question: ***What do you think are the personal factors that should also be checked before accessing or undertaking a task in a distribution location?***

- *Am I wearing the correct PPE for the task (i.e. is Arc Flash PPE required)?*
- *Do I feel a bit under the weather today? Could my decision making, or risk perception be impaired?*
- *Do I have a lot of personal things on my mind at the moment?*
- *Do I feel fatigued?*
- *Do I feel like I am going to into auto-pilot?*

Team Discussion Question: ***What do you need to know before you enter - who could tell you?***

- *PPE requirements for the task? Is Arc Flash PPE required?*
- *Is my competence in date and covers the task to be undertaken?*
- *Can I contact the ECO by another means than the substation telephone? Is there enough battery life in my mobile phone?*
- *Where the task involves MM74 DC Switchgear, is it 50 V operated?*
- *Requirements from the task risk control sheet or work package plan*
- *Requirements from the 019 documents (where 019 procedures have been implemented in the routes)*
- *Safety and communication details from the SSOWP or work package plan?*
- *Are there any current restrictions in accessing the distribution location (i.e. hot site status, restrictions in access due to the building condition, etc.)?*
- *For whom would you get the information from? ECO?, EPME?, Line Manager?, route control?, E&P RAM?*

## Slide 14 – Discussion 3

### FACILITATOR INSTRUCTIONS

- Invite your team to discuss the questions raised. A further click on the mouse will allow the hazard examples to appear to aid the discussion. The examples appear in the following order:

Team Discussion Question: ***What hazards should you be aware of when accessing and egressing a traction or non-traction location?***

- Asbestos components
- Signs of electrical burning
- Smoke
- Rotten Eggs (smell of arc'ed SF6 by-products following a disruptive failure)
- Water ingress
- Condensation
- Exposed live electrical terminals and equipment

*Note: Other hazards could be: fire hazards (such as rubbish, combustible materials, fuel), obstructions (such as tables, chairs, ladders), uneven surfaces, fire suppression systems, reduced lighting (due to failure), etc...*

Team Discussion Question: ***What actions would you take if any of these conditions are present?***

- Asbestos components - *If damage to asbestos material is suspected, arrangements must be made to immediately leave and secure the building*
- Signs of electrical burning, Smoke, Rotten Eggs smell - the distribution location must be immediately evacuated, and the ECO contacted via suitable means other than the substation phone
- Water ingress – *As per National Safety Bulletin NRB 19/01*
- Condensation – *As per National Safety Bulletin NRB 19/01*
- Exposed live electrical terminals and equipment - *Access to or near equipment with exposed live terminals shall be avoided unless the individual also holds the specific equipment competence*

Are there any actions that you have taken with consideration the other person being present which normally you would not necessarily undertake because of your competence level or experience especially if it was just you accessing & egressing?


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## Arc Flash PPE

- Following the Godinton incident, the minimum requirements for Arc Flash PPE have been enhanced.
- Consider as 3 layers of clothing – base layer (underclothes), main layer, and outer layer
- Distribution and Plant maintenance and projects staff who undertake work inside traction / non traction distribution locations will be required to wear the following **at all times**:
  - Main layer - Arc Flash polo shirt and Arc flash cargo trousers
  - Any Base layer underclothes MUST be either natural 100% cotton or approved flame retardant items

Note if you are **only** a DIST Level C you cannot work on the distribution equipment and so are not mandated to wear the Arc Flash PPE

Main Layer – polo shirt and cargo trousers



Base Layer refers to 100% cotton undergarments or approved flame retardant items

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### Slide 15 – Arc Flash PPE part 1

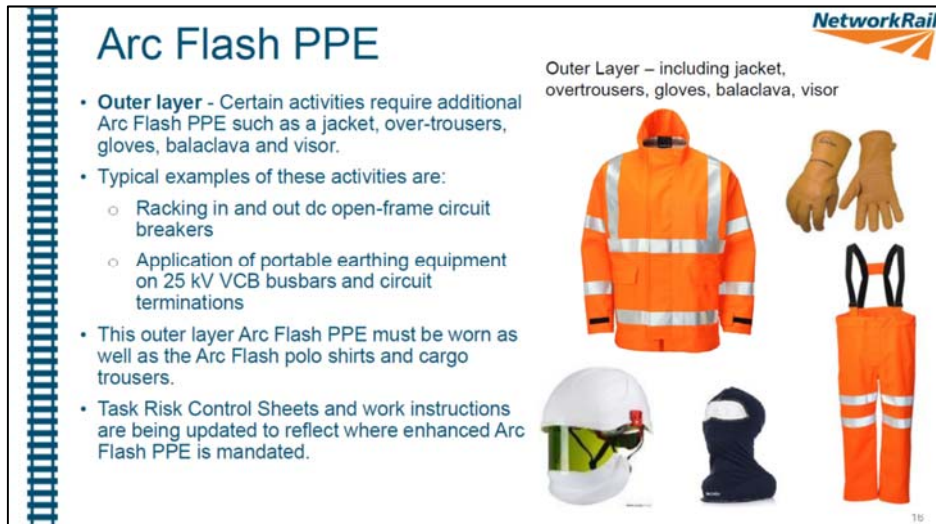
Points to say:

1. The initial investigation findings have indicated that Arc Flash PPE was not worn.
2. Following this incident, the minimum Arc Flash PPE requirements for Distribution & Plant staff have been enhanced.
3. There are 3 layers of Arc Flash PPE – base layer, main layer, and outer layer
4. Distribution and Plant maintenance and projects staff who undertake work inside traction / non-traction distribution locations will be required to wear the following **AT ALL TIMES**:
  - Main layer - Arc Flash polo shirt and cargo trousers
  - Base layer – Any Undergarments worn under Arc Flash PPE MUST be either natural 100% cotton or approved flame retardant items

**Note: WORKING** is defined as inspecting, maintaining, faulting, isolation and earthing activities, or renewal activities.

If you are only a DIST Level C you cannot work on the distribution equipment and so are not mandated to wear the Arc Flash PPE

Remember, these are the minimum Arc Flash PPE requirements set on a national basis and routes or contractors may choose higher requirements.



## Slide 16 – Arc Flash PPE part 2

Points to say:

1. **Outer layer - Certain activities require additional Arc Flash PPE such as a jacket, over-trousers, gloves, balaclava and visor.**
2. **Typical examples of these activities are:**
  - **Racking in and out DC open frame circuit breakers**
  - **Application of portable earthing equipment on 25 kV VCB busbars and circuit terminations**
3. **This outer layer Arc Flash PPE must be worn as well as the Arc Flash polo shirts and cargo trousers.**
4. **Task Risk Control Sheets and work instructions are being updated to reflect where enhanced Arc Flash PPE is mandated. These will be available soon.**

**A new national safety advice will be also issued to reiterate these requirements and it will replace the previously issued national safety advice NRA 17/09.**

**A catalogue / product list for Arc Flash PPE has been prepared as guidance as what is currently available.**





## Slide 17 – Arc Flash PPE Discussion

### FACILITATOR INSTRUCTIONS

- Invite your team to discuss the question  
***What activities and tasks do you do in a substation?***  
***What arc flash PPE do you require for these?***

Use this team to check understanding of the PPE requirements for the tasks your teams do and any concerns or questions that your teams will have. Consider the following:

- *Reminder that PPE is the last line of defence, it will not prevent an incident but can significantly reduce severity of injury*
- *What do your teams already have access as Arc Flash PPE?*
- *How much of a change is this for you?*
- *Note that the task risk control sheets will be updated to reflect the specific tasks where additional requirements are needed in the meantime a safety bulletin will be issued with the tasks*
- *Consider how you check that requirements for PPE are working – for example self assurance process has specific questions on PPE*

*Note that an Arc Flash PPE catalogue has been produced to show the available items.*

*Compliance with the new PPE requirements is required as soon as practicable but no later than 6 months – Network Rail is working with suppliers of Arc Flash PPE regarding availability*

***Network Rail teams – please look at the Yammer page on PPE for further information on the PPE Catalogue and Videos of Arc Flash PPE***

***[https://www.yammer.com/networkrail.co.uk/#/threads/inGroup?type=in\\_group&feedId=5996856](https://www.yammer.com/networkrail.co.uk/#/threads/inGroup?type=in_group&feedId=5996856)***

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# Use your SENSES...

Appearing at notice board near you....

... a reminder of the requirements when accessing a distribution location, think of your **SENSES**....

**SUBSTATION** ⚠️ All tractors and off road vehicles require a valid licence. If you are a tractor driver, you must have a valid licence and a valid insurance policy.

**ENTRY** 🚫 No access unless authorised and authorised.

**NOISE** 🗣️ Listen for abnormal sounds such as grinding or hissing or those which are indicators of the presence of abnormal conditions.

**SMELL** 🤔 Be aware of abnormal smells such as burning, excessive discharge, carbon, hydrogen or acetylene.

**ENVIRONMENT** 🌞 Look for signs of water ingress, condensation, flooding, etc.

**SAFETY** ⚠️ A safe system of work must be in place and the required 5-Step PPE worn for the task to be undertaken.

If any abnormal condition is observed, the distribution location must be immediately evacuated and the ETSI contacted. Do not take any unnecessary risks. Other than the information above.

**E S I S K**

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## Slide 18 – Distribution SENSES part 1

### FACILITATOR INSTRUCTIONS

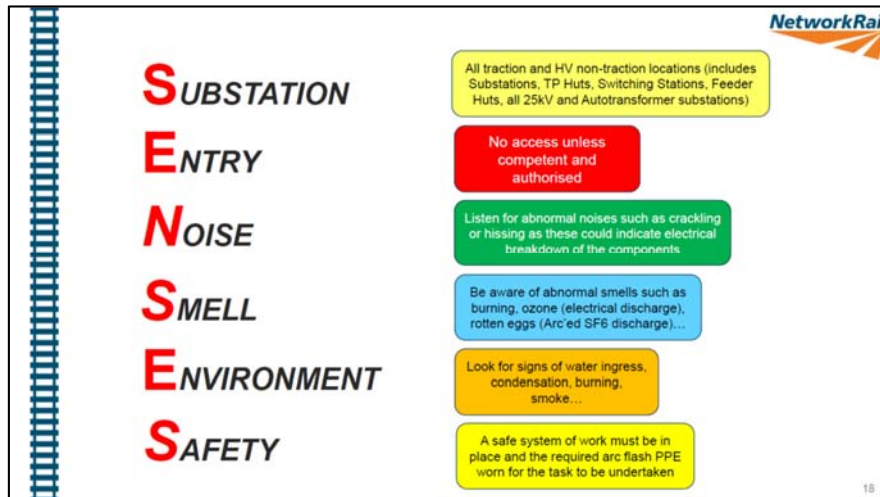
- Circulate a copy of Distribution SENSES poster around the team to view.

### Guidance

- *The idea behind SENSES in relation to the access & egress of distribution locations is that the individual will rely on their human senses to detect, assess and take the appropriate actions if an abnormal condition is present. The key word being SENSES will hopefully act as an 'aid-memoir' and the poster will appear on notice boards.*

### Points to say:

**Appearing at notice board near you.... ... a reminder of the requirements when accessing a distribution location, think of your *SENSES*....**



## Slide 19 – Distribution SENSES part 2

### FACILITATOR INSTRUCTIONS

- Each click will build up to the keyword SENSES. The basis of each letter is described below and displayed on the slide.

Points to say:

**S for Substation** - All traction and HV non-traction locations (includes Substations, TP Huts, Switching Stations, Feeder Huts, all 25 kV and Autotransformer substations)

**E for Entry** - No access unless trained and authorised

**N for Noise** - Listen for abnormal noises such as crackling or hissing as these could be indication of the electrical breakdown of components

**S for Smell** - Be aware of abnormal smells such as burning, ozone (electrical discharge), rotten eggs (Arc'ed SF6 discharge) ...

**E for Environment** - Look for signs of water ingress, condensation, burning, smoke...

**S for Safety** - A safe system of work must be in place and the required Arc Flash PPE worn for the task to be undertaken

Reiterate: If any abnormal condition is detected, the distribution location must be immediately evacuated, and the ECO contacted via suitable means other than the substation phone.



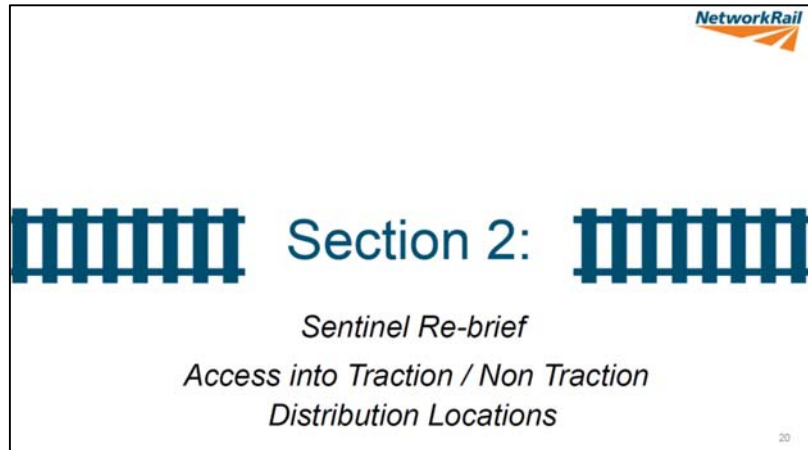
## Slide 20 – Worksafe & Close Call

Points to say:

1. **If you are unsure...STOP....DO NOT work if it's not safe...**
2. **Remember to use the Worksafe or Close Call procedures as required**
3. **EVERYONE HOME SAFE EVERY DAY**

# Level C Re-briefing Materials

## Facilitator Guidance



### **FACILITATOR INSTRUCTIONS**

- This session will take around 30 minutes
- **Slides 22 to 36** must be briefed in their entirety though the use of your own experience to enrich the understanding is acceptable
- This is called a Level C Briefing because the content of this is taken from the DIST Level C training but it equally applies to all DIST Level A and B holders which is why the competence event is linked to DIST Level C, B and C
- Note: For South East staff who have undertaken the Level C re-brief as part of the SE route-based Safety Stand Down, there is no requirement to retake this. However, the requirement for their Line Manager to capture the Level C re-brief in Oracle / Sentinel is required
- Guidance on how to record the Level C re-briefing for Line Managers will be issued as part of this pack
- There are no assessments or tests to undertake.
- **Slide 37** contains further discussion questions to be discussed with the team:

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## Level C Re-briefing – Further Discussion Points

- *Were you aware of the requirements and procedures of the Level C competence prior to the re-brief? Were there any surprises?*
- *When was the last time you may have noticed water ingress or increased levels of condensation in distribution locations? Was this reported and action upon?*
- *Have either yourself or your team had to invoke either the work-safe or close call procedure when accessing or egressing a distribution location? What were the outcomes?*

25-Mar-19 36

## Slide 37 – Level C Re-briefing – Further Discussion Points

### FACILITATOR INSTRUCTIONS

- Invite your team to discuss the questions raised.

Team Discussion Question: ***Were you aware of the requirements and procedures of the Level C competence prior to the re-brief? Were there any surprises?***

Team Discussion Question: ***When was the last time you may have noticed water ingress or increased levels of condensation in distribution locations? Was this reported and action upon?***

Team Discussion Question: ***Have either yourself or your team had to invoke either the work-safe or close call procedure when accessing or egressing a distribution location? What were the outcomes?***



Safety Hour and Level C Briefing –  
Your views

Feedback from this briefing is greatly appreciated and can be directed to the Network Rail M&EE Distribution Team via:

[Kyle.Windsor@networkrail.co.uk](mailto:Kyle.Windsor@networkrail.co.uk)



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## Slide 38 – Your views

### FACILITATOR INSTRUCTIONS

- Explain to the team that their feedback is greatly appreciated, and it can be emailed to the STE M&EE Distribution team via the email addressed stated. Kyle Windsor is collating all the feedback from the safety hour briefings and feeding this back into the Godinton technical and steering groups.

To end.....

**KEEP SAFE and remember your SENSES**

## **National Electrical Safety Briefing**

### **Access to Traction or non-Traction Distribution Locations – Frequently Asked Questions**

**Question: Where can I find a copy of the national safety bulletin with regards to accessing distribution locations?**

*Answer: National Safety Bulletin NRB 19/01 can be found on the DU notice board or in Safety Central via the safety bulletin tab on the home page. If you cannot access either of the above, ask your line manager to either email you a copy or supply a printed copy.*

**Question: Why do we allow the AC HV switchboard to remain energised if steam is present in the substation, but need to get the DC switchboard de-energised?**

*Answer: The build-up of steam can be strongly associated with water or moisture between energised DC traction conductors and earthed metalwork or ground, which can lead to equipment damage and fire. The build-up of steam on or around an AC HV switchboard is relatively unknown and would possibly if present, operate the AC protection relays on earth fault.*

*The very important action to be taken is DO NOT enter the substation and inform the ECO from a phone other the substation telephone.*

**Question: I have only just completed my Level B training course and category event, so I only hold LB DIST competence at level 2 status. Am I still required to undertake the Level C re-briefing?**

*Answer: YES. The Level C Rebrief is compulsory for existing holders of Level B and Level A distribution competences as well as existing Level C holders. For Level B and A holders, this is irrespective of the competence level status.*

**Question: Where will I find out the tasks which require me to wear the outer layer of Arc Flash PPE?**

*Answer: An updated national Safety Advice on Arc Flash PPE will be issued very soon and will replace the existing national safety advice NRA 17/09. This updated Safety Advice will detail all the tasks which require the outer layer of Arc Flash PPE clothing.*

*Task risk control sheet NR/L3/MTC/RCS0216/DP01 is also being updated to re-capture the new Arc Flash PPE requirements and will be more explicit on the inclusion of DC traction distribution equipment into scope.*



**Question: What is the difference between Flame Retardant PPE and Arc Flash PPE?**

*Answer: The main difference between Flame Retardant PPE and Arc Flash PPE is that all Arc Flash PPE is inherently Flame Retardant, however not all flame retardant PPE can protect from an Arc Flash. This is due to the testing process which determines the protective rating of PPE garments. Purely flame retardant garments are not exposed to electrical arcs when tested so therefore cannot be classified as protecting against an Arc Flash.*

**Question: Can I wear my own underwear with the main layer of Arc Flash PPE?**

*Answer: YES. As long as it is 100% cotton (no synthetics/polyesters/nylons) and contains no metal, Bra's should not contain underwire or metal zips, and should be worn with the flame retardant base layers.*

**Question: Why do I need to always wear the balaclava with the Arc Flash helmet and visor?**

*Answer: The helmet and visor will provide arc flash protection for your face, eyes and the top of your head, however you need the balaclava to protect the rest your head and neck.*

**Question: Do I still need to wear my safety glasses when wearing the Arc Flash helmet and visor?**

*Answer: NO, unless you need to wear your glasses normally to improve your sight.*

**Question: In my role as a NR telecoms technician, I use my Level C to access the substation to test the telephone so do I need to wear Arc Flash PPE?**

*Answer: NO. We have risk assessed the tasks being carried out by NR Telecoms in the substation environment and there is no risk of arc flash when testing the telephone, communication lines or modems.*

**Question: In my role as a Buildings Engineer, I use my Level C to access the substation to inspect the building or domestic supplies so do I need to wear Arc Flash PPE?**

*Answer: NO. We have risk assessed this task and there is no risk of arc flash. For any intrusive maintenance or fault rectification of the building fabric or domestic supplies will require a safe system of work to be agreed with the relevant Electrification & Plant Maintenance Engineer.*

**Question: If I am undertaking a task which requires me to wear the Arc Flash outer layer and I have non Distribution & Plant staff in the building, do they need wear the main and outer layers too?**

*Answer: It is recommended that while undertaking the task, the non Distribution & Plant staff are asked to vacate the building or area (outdoor switchgear) temporarily until the task is completed. If this is not practicable a risk assessment should be carried out prior to the work to determine the level of arc flash PPE required for the non distribution staff.*

**Question: If I am showing a Distribution & Plant apprentice or new starter how to carry out a task which requires me to wear the Arc Flash outer layer, should they also wear the outer layer?**

*Answer: YES. If they do not have the required Arc Flash outer layer items, they should be asked to vacate the building or area (outdoor switchgear) and not shown the task.*

**Question: If the substation is completely isolated from all high voltage and/or DC traction supplies, do I still need to wear my Arc Flash PPE?**

*Answer: For Distribution & Plant staff, the requirement to wear the main layer of Arc Flash polo shirt and cargo trousers at all times will still remain.*

**Question: Does the Level C Re-brief count as an extra competence on my profile?**

*Answer: NO. We are using sentinel to track the progress of the Level C re-briefing so it has been set up as a learning event and gives a status of 3 – briefed when logged as completed.*