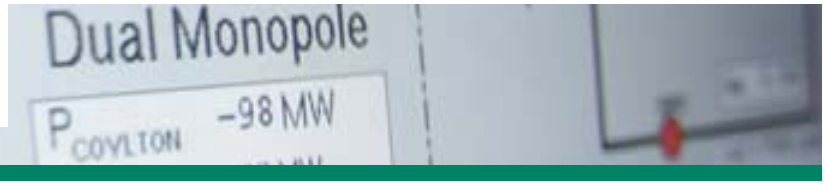
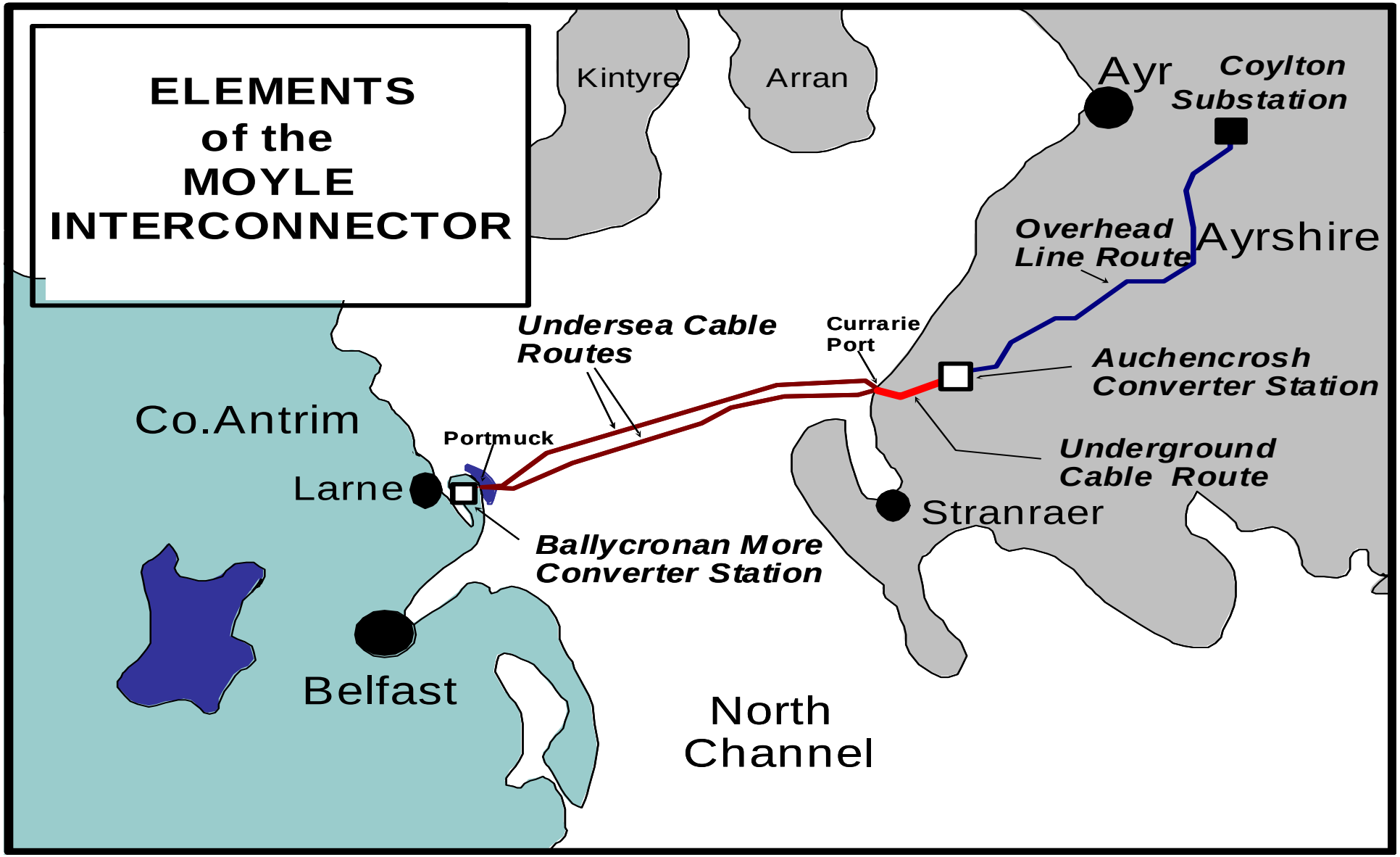
Agenda



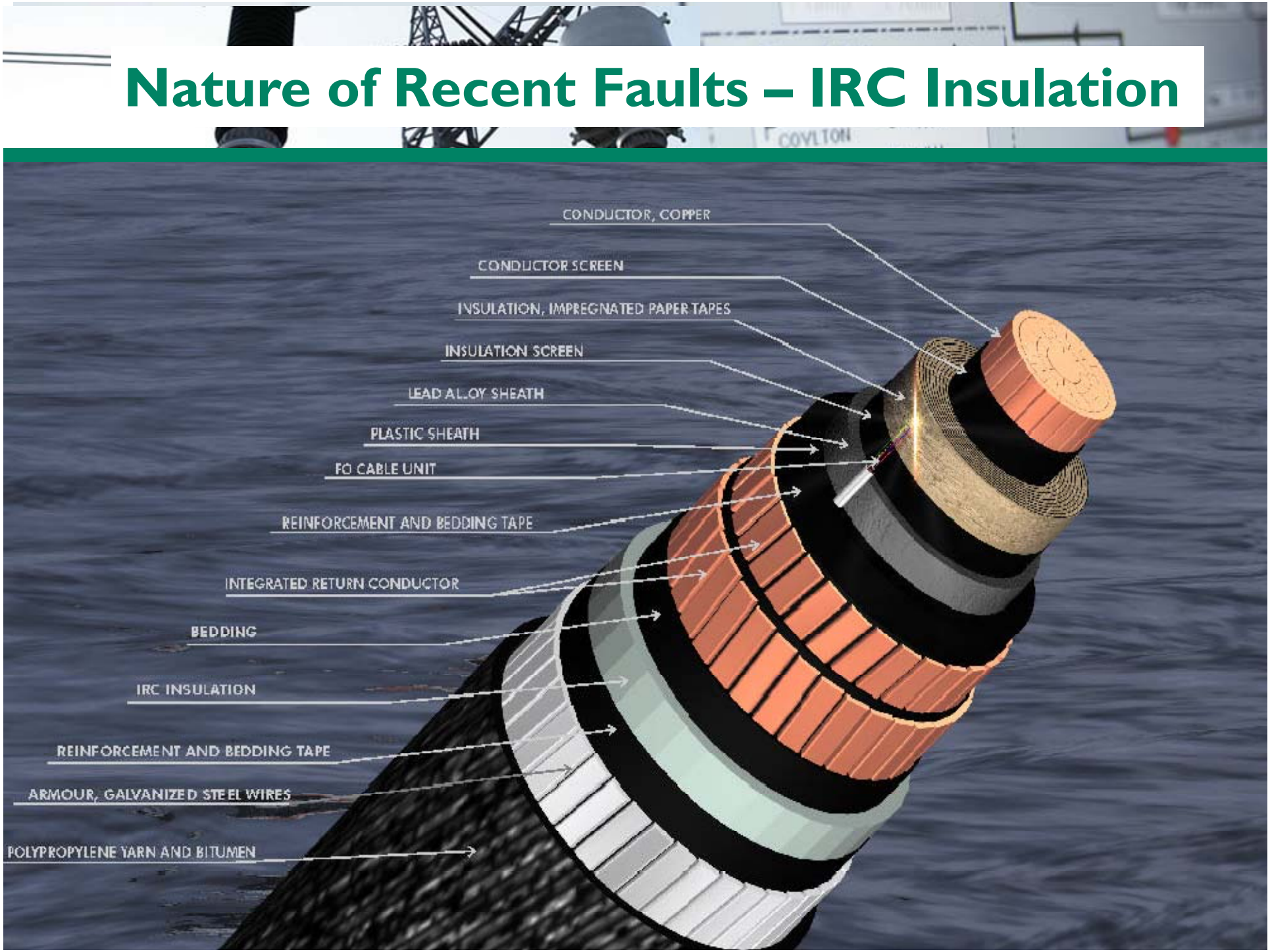
- Moyle Interconnector Overview
- Recent Fault History
- Nature of faults
- Long term solution, considerations and timescales
- Interim work
  - Appraise interim bi-pole with metallic return option
  - Attempt to pinpoint current fault
- Summary



moyle
interconnector

Recent cable fault history

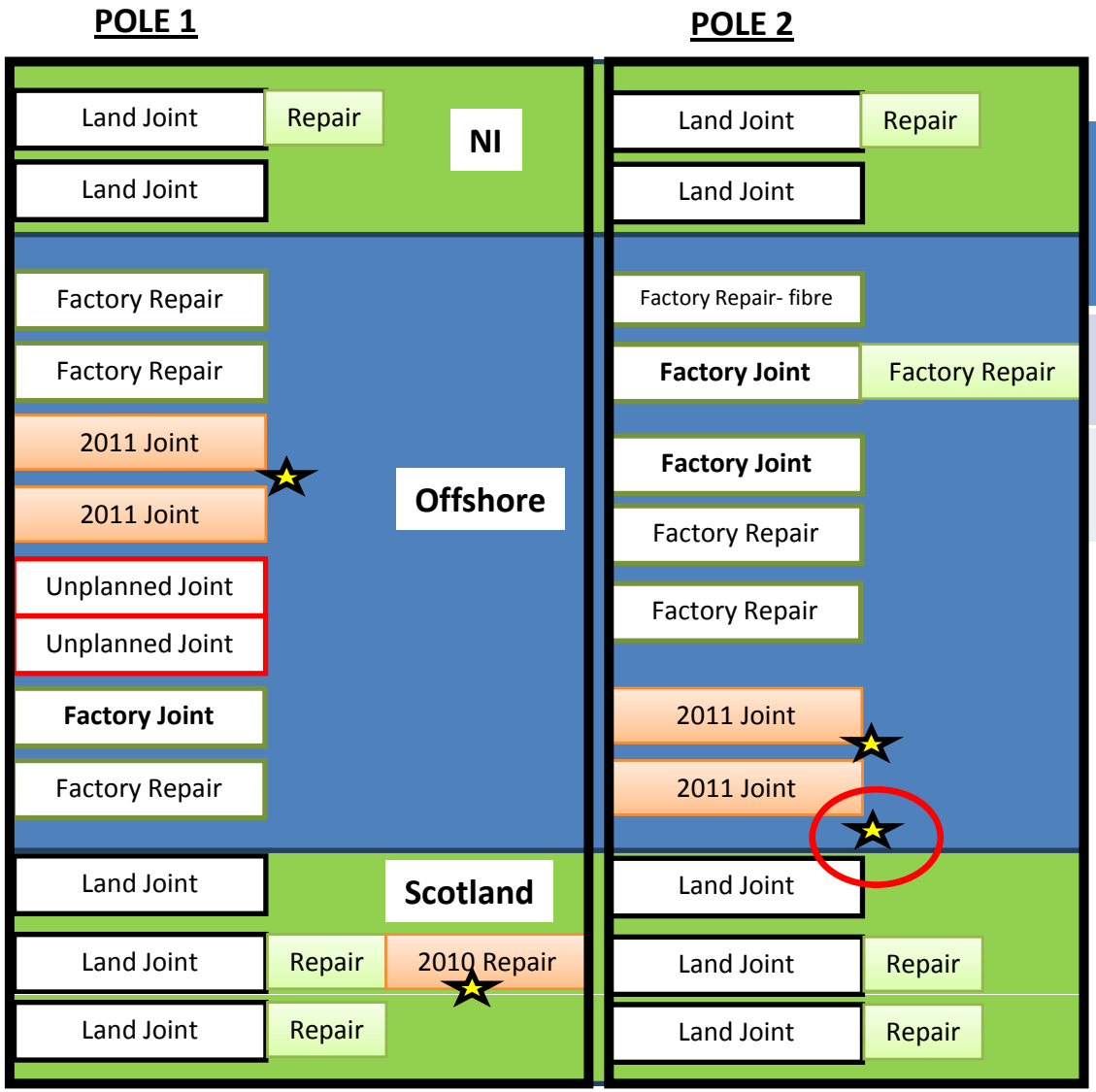
Nature of Recent Faults – IRC Insulation



Nature of Recent Faults – IRC Insulation

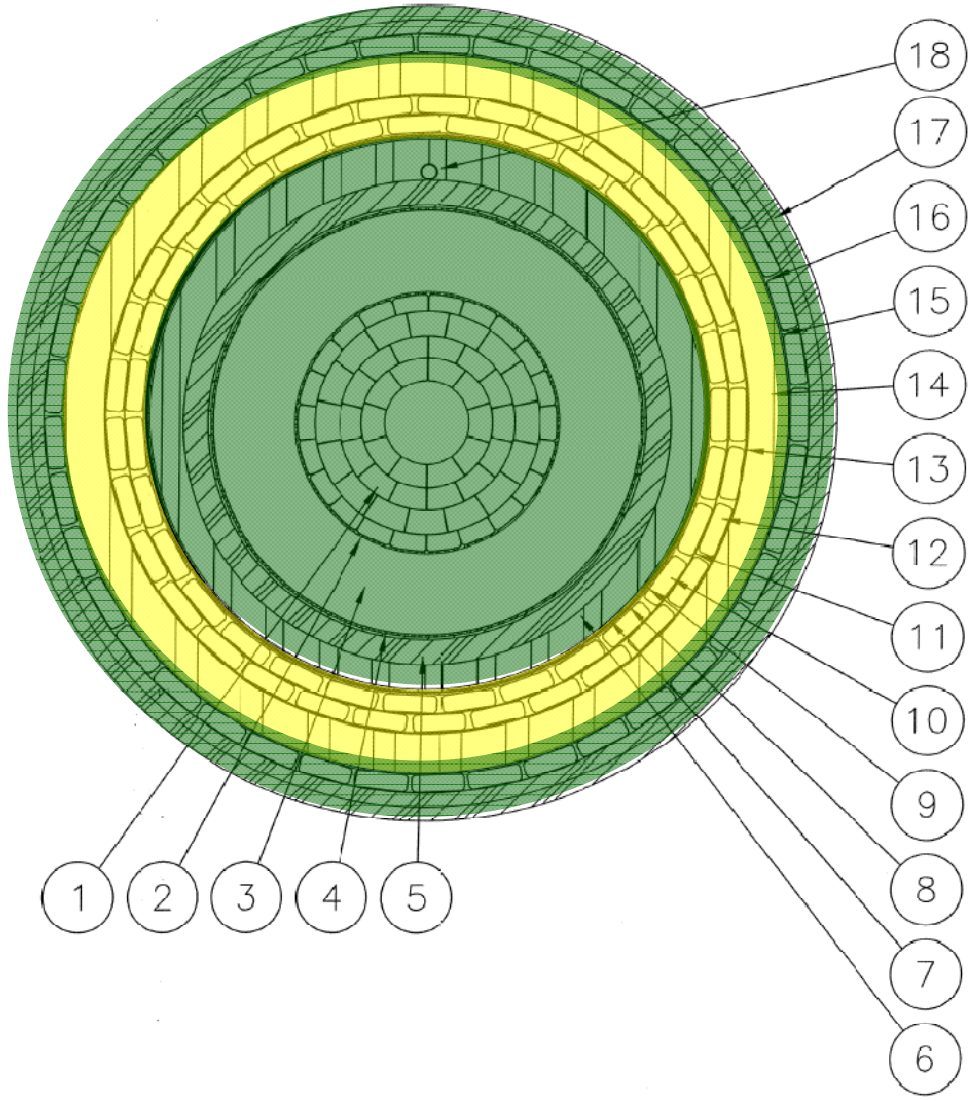
Nature of Recent Faults – IRC Insulation

Obvious Risk of further IRC insulation faults



IRC Insulation known at risk locations	Pole 1	Pole 2
Onshore	4	5
Offshore	6	4

No Issues with HV Elements of Cable



18		INTEGRATED FO ELEMENT		
17		OUTER SERVING	4	Approx. 116
16	41	STEEL ARMOURING	7,5 x 2,5	108.1
15		BEDDING		103.1
14		IRC INSULATION	5.5	102.6
13		BEDDING		90.8
12	34	2. LAYER OF COPPER WIRE RET. COND.	7,5 x 2,4	90.1
11		BEDDING		85.3
10	32	1. LAYER OF COPPER WIRE RET. COND.	7,5 x 2,4	85.1
9		BEDDING		80.3
8		REINFORCEMENT	2 x 0.2	79.8
7		BEDDING		79.0
6		PLASTIC SHEATH (Sightly eccentric)	3.5 / 5.8	78.5
5		LEAD SHEATH	3.5	69.2
4		INSULATION SCREEN		
3		INSULATION, IMPREGNATED PAPER TAPES	11.5	60.5
2		CONDUCTOR SCREEN		
1		CONDUCTOR, COPPER		36.8
POS.	QTY.	DESCRIPTION	NOM. THICKN. mm	NOM. DIAM. mm

05	111201	AS BUILT	HS	HS	EiK	ERA		
ISSUE	DATE	REASON FOR ISSUE	DRAWN. BY	PREPARED	CHECKED	APPROVED	CHECKED	APPROVED

SCALE NTS | FRAME : A3 | PROJECTION | NEXANS NORWAY AS | CLIENT

CLIENT: MOYLE INTERCONNECTOR LTD
NORTHERN IRELAND - SCOTLAND MOYLE INTERCONNECTOR

CLIENT'S DRAWING NO.:

CONTRACT NO.: | DOCUMENT CATEGORY:

DRAWING TITLE: NOZFA–L 250 / 2 kV 1x1000/1150 mm2 Cu

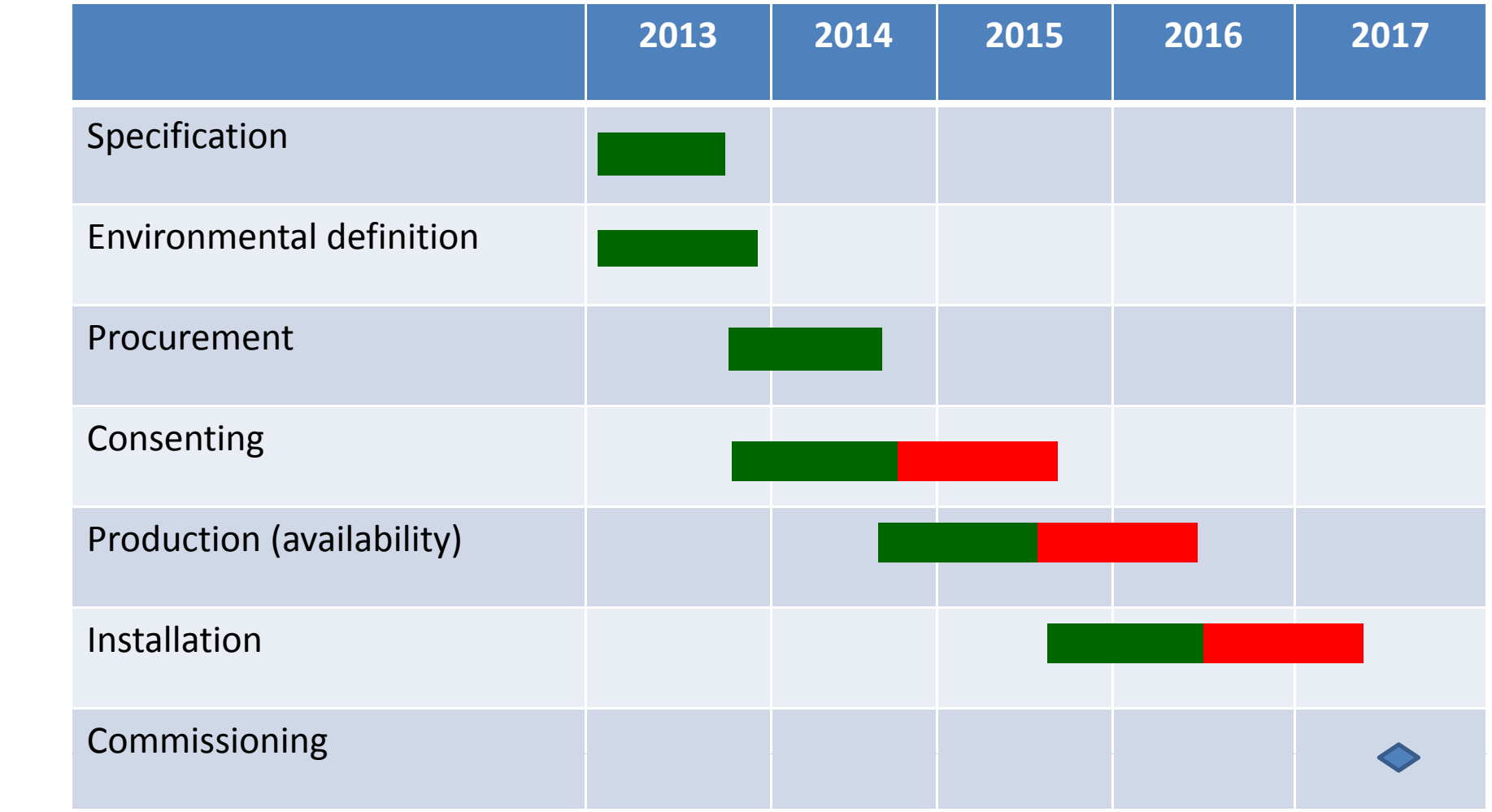
Nexans

NEXANS DRAWING NO.: 132976 | SHEET 5

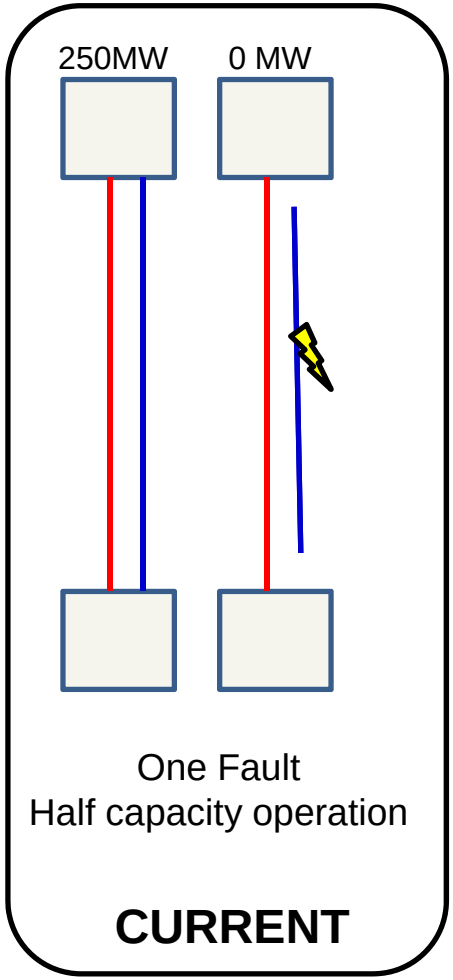
Replace LV Conductors – What a programme might look like

Major uncertainties on consents, factory availability and co-incidence with summer lay season - these will crystallise as plan progresses

Objective is to complete asap and run activities in parallel where possible

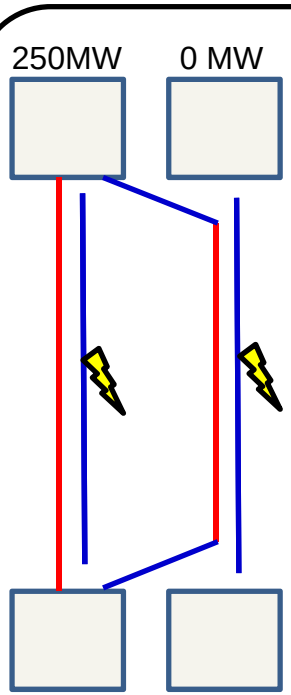


Reconfiguration Options



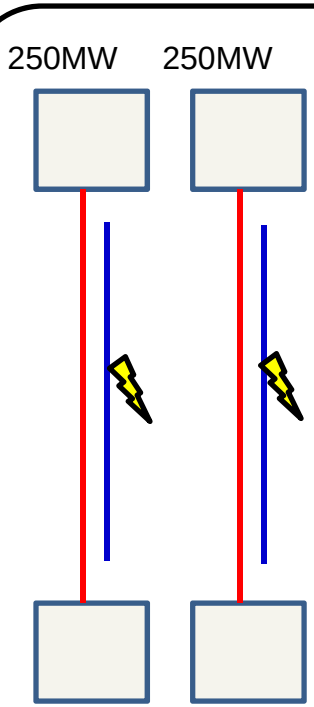
One Fault
Half capacity operation

CURRENT

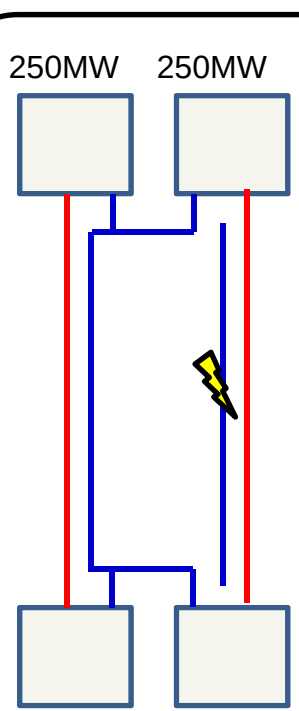


Two faults
Reconfigure conductors
Half capacity operation

FALLBACK



RIG OLE

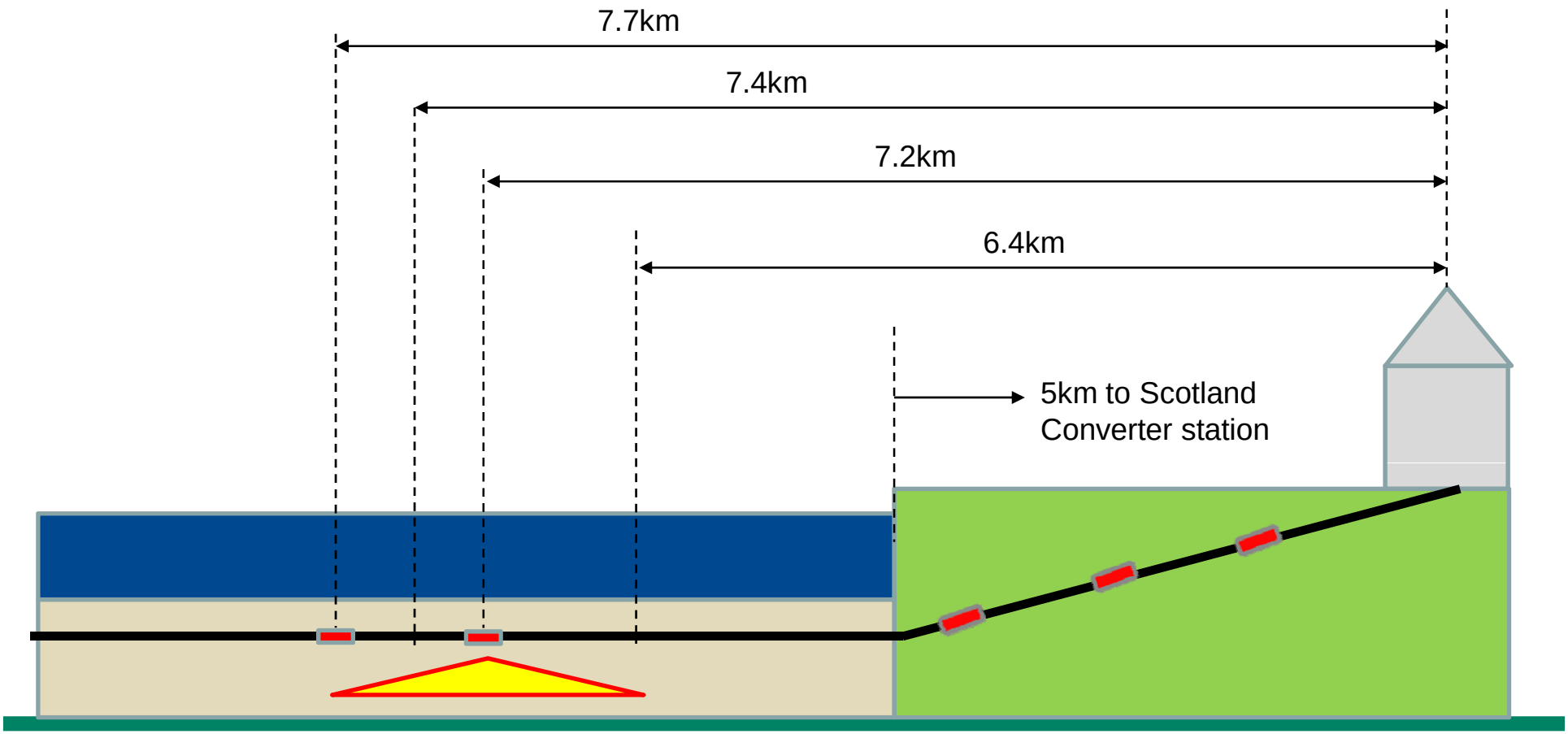


+250kV -250KV
One or both LV returns

BI-POLE WITH IRC RETURN

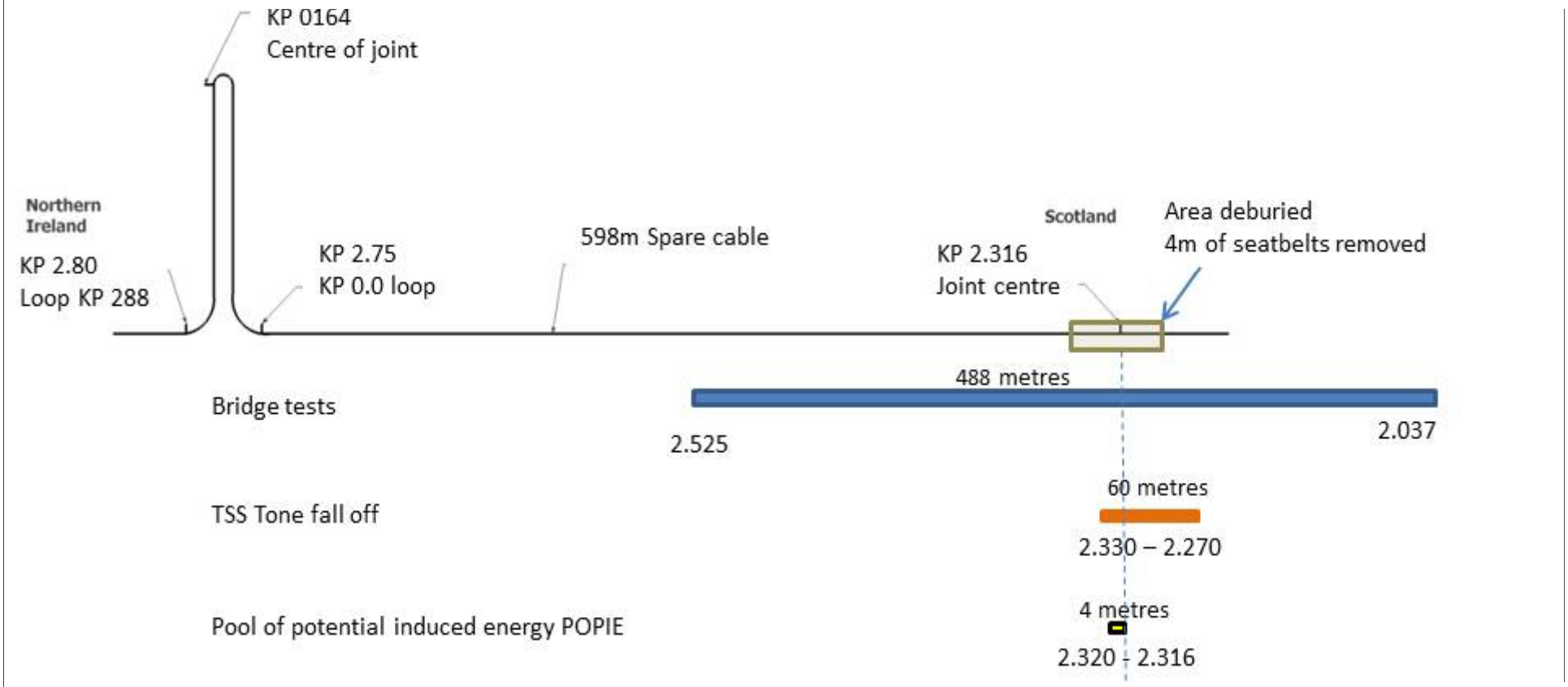
mutualenergy

Precise Location of Existing Fault

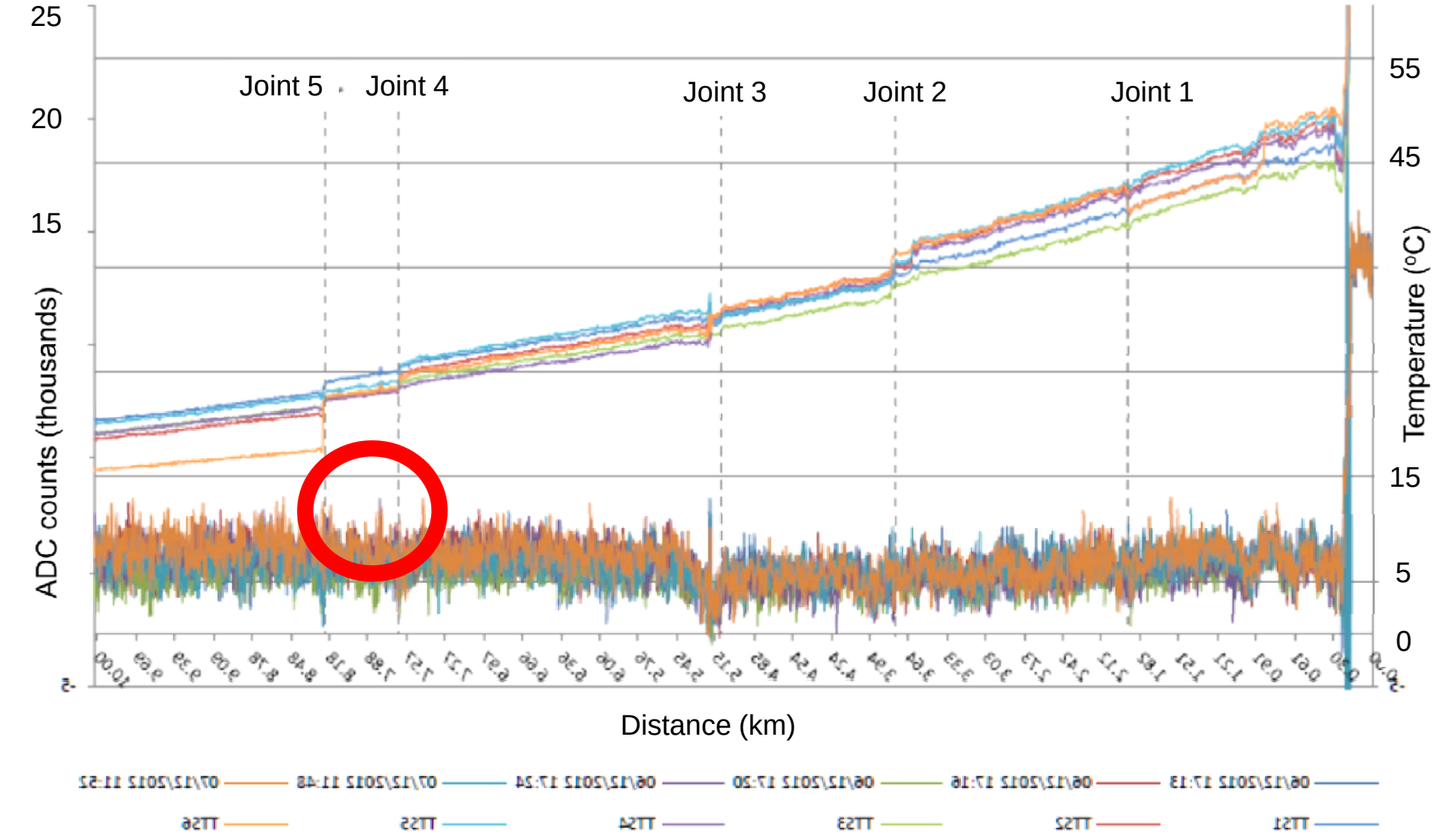


mutualenergy

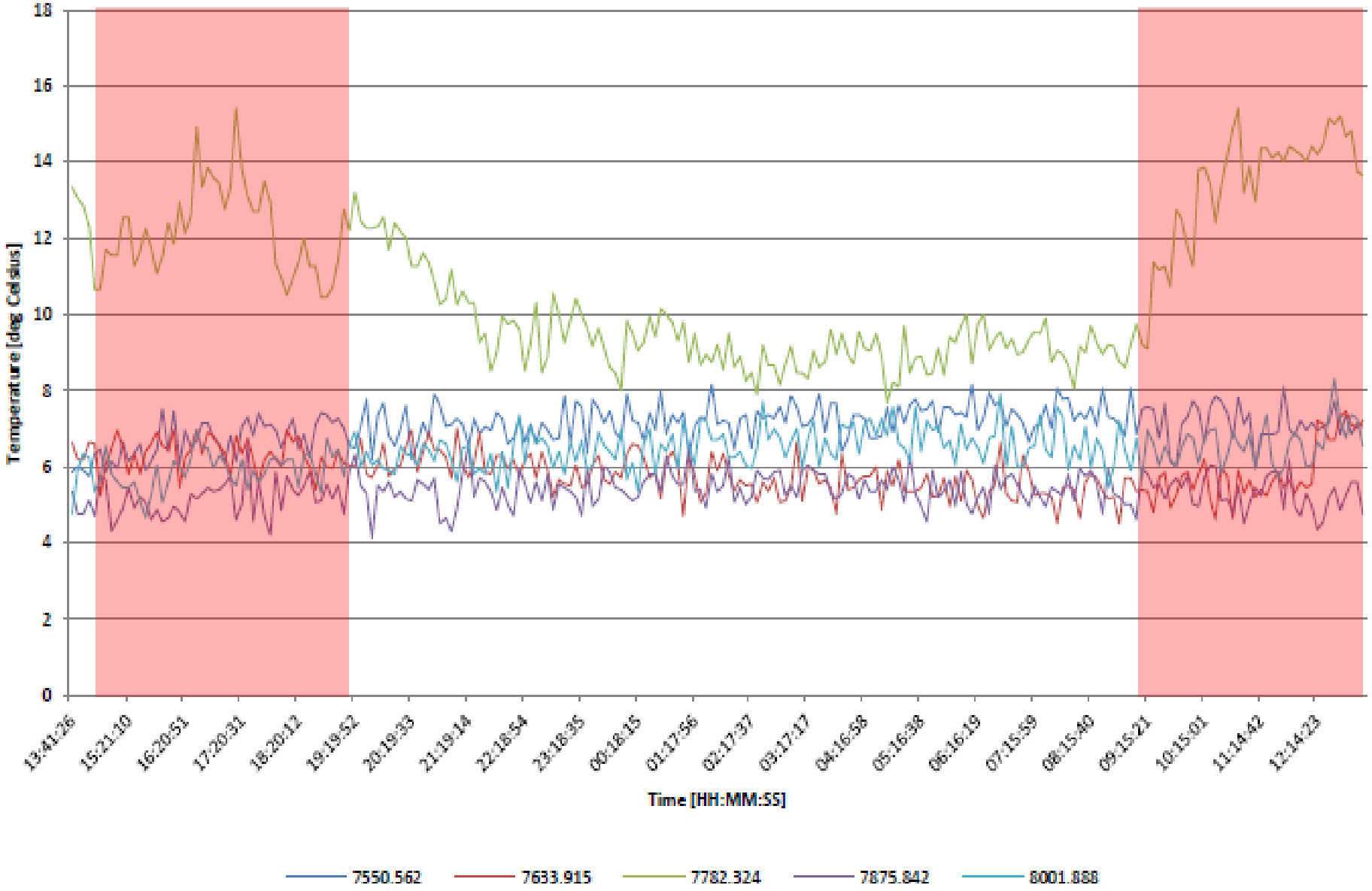
Results of Autumn 2012 campaign



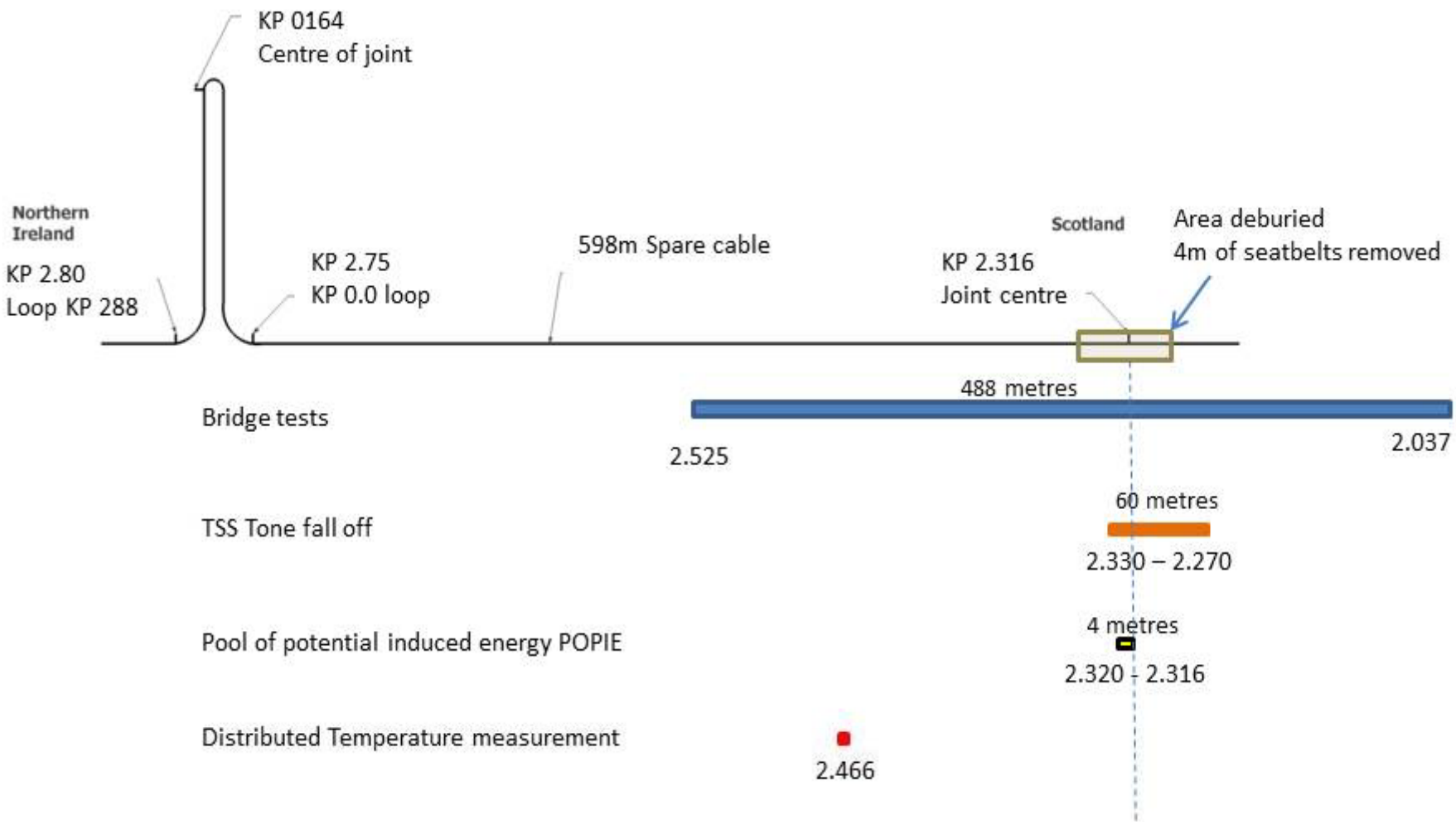
Distributed Temperature Sensing (DTS)



Hotspot when current injected



April 2013 offshore campaign on hotspot



Summary

- Moyle's base case remains continued operation as single monopole using the integral HV & LV in the south cable
- The reliability of the single monopole is bolstered by recent successful testing of a "fallback" to run 250MW in the integral HV's – can be configured in 12hours
- There is a low level of confidence in LV part of cable system but there are no reasons to doubt the integrity of the HV elements of the cables
- The longer term strategy to return to full technical capacity at previous high levels of reliability is to replace the two LV conductors by laying two new LV cables
- This project has potentially a 4/5 year delivery with early uncertainties being considered as factory availability and consenting
- The feasibility of an interim option to run as a 500MW bi-pole using one or both of the [unreliable] IRC's at a much lower electrical loading is being reviewed
- Precisely pinpointing the current fault might enable a lower risk, lower cost repair to be engineered and considered