

Module 002

Reliability Centred Maintenance of Signalling Equipment (ROSE) – FPL Testing Criteria

Endorsement and Authorisation

For endorsement and authorisation, please refer to NR/SIG/10665

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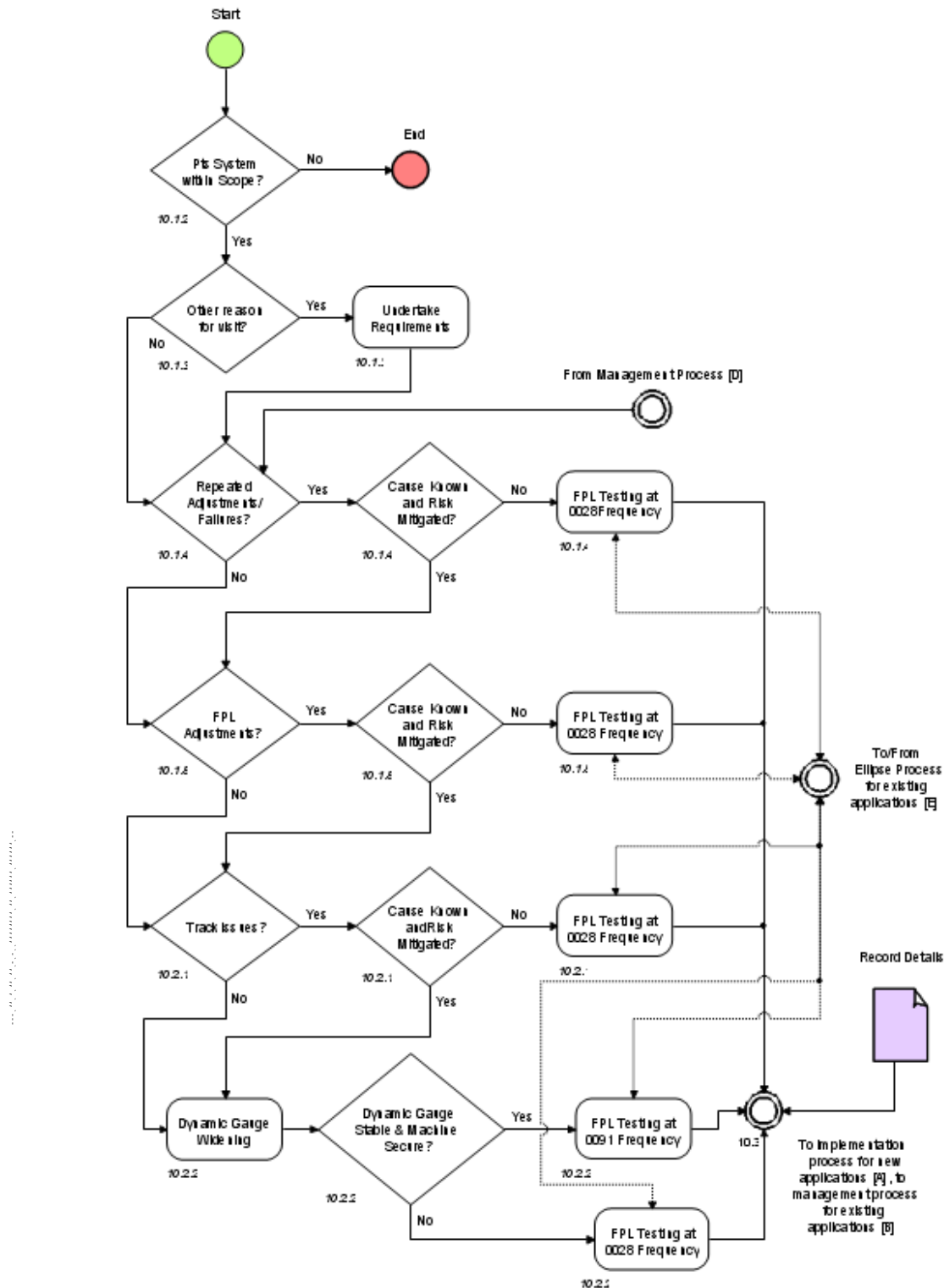
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1 FPL Testing Frequency Rationalisation

1.1 Selection Criteria

1.1.1 Flow Chart



NOTE Within this document, the Ellipse interval of 0028 days is used to define the minimum period between FPL tests. At depots that, as at 31 March 2009, operate a fixed interval FPL testing regime

of between 28 and 42 days, the existing period may be used in place of the 28 day minimum; in all other cases the 28 day period shall be applied.

1.1.2 Point System within Scope

The Infrastructure Maintenance Engineer (IME) in liaison with the Signal & Telecom Maintenance Engineer (STME) and the Track Maintenance Engineer (TME) shall only select point systems for this regime that meet the following criteria:

Switch Rail Type	Point Operating Equipment	Supplementary Drive Type	In Scope
flat bottom, full depth vertical or shallow depth vertical or inclined rail sections of 113A, UIC54, NR60 or Bullhead (see note)	Alstom HW style, WRSL Style 63, Ansaldo T72/VCC, or Rail Clamp Point Lock.(RCPL)	None	Yes
		Mechanical	Yes
		Hydraulic	No
		Torsional	No
	In bearer Clamplock (IBCL)	None	Yes
		Mechanical	Yes
		SO Backdrive (Hydrive)	Yes
		Torsional	No
		Other hydraulic	No
	Mechanical	N/A	No
	Other	N/A	No

- **Note** - Switches with bullhead rail must meet the conditions in section 1.8 rationalisation applied to it under this standard.

1.1.3 Other Reasons for Signalling Visits

The STME in liaison with the IME shall identify any other reasons for inspections or preventative maintenance visits to the point system. This can include but is not limited to:

- Signalling inspections defined by [NR/L2/TRK/6100](#)
- Signalling inspections required by a Special Inspection Notice (NR/SIN)
- Signalling inspections required by local performance issues

If for any reason(s) an inspection or preventative maintenance visit to the point system is required over and above that required by NR/SMS cyclic preventative maintenance for the point system, even if the frequency of these is different from the Facing Point Lock (FPL) frequency decided by this selection process, the STME shall be responsible for those inspections/tasks being carried out.

NOTE Other point configurations not currently covered by this standard may also require more frequent inspections in line with the Track inspection regime detailed in [NR/L2/TRK/6100](#)

1.1.4 Repeated Adjustments or Failures

The STME, Section Manager (Signals) (SM(S)) or the Performance and Assurance Engineer (PAE) in liaison with the IME shall examine the records of signalling corrective maintenance to the point system. These records can come from (but are not limited to):

- Fault Management System (FMS)
- Ellipse Work Arising

If there has been repeated lock stretcher or point rodding (drive, lock and detection rod) failures, or adjustments to these (repeated is defined as two or more incidents in the last two years) the root or fundamental cause for these failures shall be investigated and rectified or the risk mitigated. If this is not undertaken or the risk cannot be mitigated FPL testing at a frequency of 0028 days shall be required in this instance.

1.1.5 FPL Adjustments

The STME, SM(S) or the PAE in liaison with the IME shall examine the records of FPL adjustments that have been undertaken on the point system. These records can come from (but not limited to):

- Fault Management System (FMS)
- Ellipse Work Arising
- NR/SMS Record Cards

If there have been repeated FPL adjustments (repeated is defined as two or more adjustments in the last two years) the root or fundamental cause for these failures shall be investigated and rectified or the risk mitigated. If this is not undertaken or the risk cannot be mitigated FPL testing at a frequency of 0028 days shall be introduced in this instance.

NOTE An FPL adjustment is required when some part of the system changes. In some cases (e.g. a 0.6mm shim for a Rail Clamp Point Lock due to wear or repairs following a run-through), no risk remains but the details shall be recorded and then excluded as part of the process of changes to the FPL frequency.

1.2 Track Issues

1.2.1 General

The TME, Section Manager (Track) or the Performance and Assurance Engineer (PAE) in liaison with the IME shall examine the records of required reactive work for the Point system. This can include but is not limited to:

- voiding of switch tips
- dynamic gauge widening

Liaison with the STME or PAE shall be undertaken for signalling records of corrective items that will support or add to the detail of Track issues on the point system. These records can come from (but are not limited to):

- Fault Management System (FMS)
- Ellipse Work Arising

- NR/SMS Record Cards
- Patrolling Records

If there has been repeated reactive work for Track issues (repeated is defined as more than two instances of reactive work in the last two years) the root or fundamental cause for these failures shall be investigated and rectified or the risk mitigated. If this is not undertaken or the risk cannot be mitigated FPL testing at a frequency of 0028 days shall be required in this instance.

Excess voiding or poor track geometry (as detailed in [NR/L2/TKR/001](#)) leads to vibration and premature wear of signalling components which causes the FPL to require adjustment. This is more likely to be an issue on high speed and/or high traffic lines.

1.2.2 Dynamic Gauge Widening

If timber bearers are used in the point system the TME and the STME shall check (by direct observation in a site visit or detail from their relevant SM(T) and SM(S)) the following:

- The track gauge is stable
- The point machine (if used as the actuator) is secure and stable

NOTE The risk of gauge spread or point machine shuffle is greatest for switches on timber bearers in poor condition.

If concrete bearers are used in the point system the TME and the STME shall check (by direct observation in a site visit or detail from their relevant SM(T) and SM(S)) the following:

- the track gauge is stable

NOTE All components used to fasten the rail to the bearer shall be in place and in good condition to maintain the gauge.

If the conditions for timber or concrete bearers are not met FPL testing at a frequency of 0028 days shall be introduced.

If these conditions are met, along with the requirements in 1.1.2, 1.1.3, 1.1.4, & 1.1.5, FPL testing at a frequency of 0091 days can be introduced.

1.3 Continuation of Process

The IME in liaison with the TME, STME, and SSM shall be responsible for starting implementation at this stage of the process for new applications (section 1.4) or following the management process for existing assets (section 1.5).

A record of the selection shall be made. The following information on this selection or change to the original selection shall include the following as a minimum:

- Point identification and location
- Original frequency (use Ellipse terminology, e.g. 0091 days)

Reason for original frequency (only required when the frequency is changed from the original selection by this process)

As appropriate, change which has taken place or reason for no change

- Proposed frequency (use Ellipse terminology, e.g. 0091 days)