AN COIMISIÚN UM RIALÁIL IARNRÓID
COMMISSION FOR RAILWAY REGULATION

19th June 2018

Re: FOI request, Granting request [Reference number: FOI180525]

I refer to your request dated 25th May 2018 made under the Freedom of Information Act 2014, which was received on 25th May 2018, for records held by Commission for Railway Regulation (CRR). Your request sought the following;

> *'I wish to request, under the Freedom of Information Act, access to a copy of all safety audits and inspections (including post-incident inspections) completed by the CRR in 2017 and to date in 2018 in which any enforcement action was directed. I would prefer to receive any records released by email.'*

A clarification was sought from you, to which you responded on 12th June 2018;

> *'To clarify, I do not need names / details of any personnel named in the audits.'*

I have now made a final decision to Grant your request to all records. A schedule of records and the records are attached.

All non-personal FOI requests will be recorded on an FOI disclosure log which will be published on the CRR website in due course.

Should you wish to discuss the above, please contact me at 01-2068110.

Yours sincerely,

Shane O'Duffy

Shane O'Duffy
Decision Maker
Commission for Railway Regulation

FOI Request Reference: FOI180525

Schedule of Records: Summary of Decision Making

Record No.	Brief description	File Ref.	No. of pages	Decision: Grant / Part-grant / Refuse	Basis of refusal: section of FOI Act	Public interest considerations	Reason for decision
1	22-17-A BBRI SMS Audit Report		33	Grant			
2	32-17-A IE-IM Risk Control Measures Related to the Supply of Safety Critical Components Audit Report		30	Grant			
3	16-17-I Scour Susceptible Bridges Inspection Report		13	Grant			
4	27-17-I Monitoring of Dangerous goods regulations Inspection Report		8	Grant			
5	47-17-I IMO compliance with IMO SMS Standards 031 and 032 Inspection Report		15	Grant			
6	50-17-I Drogheda Depot Inspection Report		14	Grant			
7	Transdev Improvement Notice	See FOI180404 request on CRR website, Record No.4	2	Previously Granted			

(1)

AN COIMISIÚN UM RIALÁIL IARNRÓID
COMMISSION FOR RAILWAY REGULATION

CRR Audit No. 22/17-A

Balfour Beatty Rail Ireland Ltd – Safety Management System (SMS) Audit at a Strategic Management Level

Audit Conducted May and June 2017

Issue: 01

Revision History:

	Issue: Final	
Prepared By	Gavin Astin Dr. Jonathan Ellis	21/08/2017
Reviewed By	Dr. Edward Smith	21/08/2017
Reviewed By	Shane O'Duffy	21/08/2017
Authorised By	Gerald Beesley	23/08/2017

Executive Summary

The Commission for Railway Regulation is the National Safety Authority (in respect of railways) in the Republic of Ireland. In accordance with the Railway Safety Act (2005), as amended by Statutory Instrument No. 444, the CRR is required to supervise a railway organisations' continued application of their safety management system, once they have been granted a safety certificate.

Balfour Beatty Rail Ireland (BBRI) Ltd operate and maintain Iarnród Éireann's (IÉ-IM) fleet of On-Track Machines (OTMs). The movement of the OTMs from depot to worksite, and between worksites, requires BBRI to be in possession of a safety certificate confirming the conformity of their Safety Management System (SMS) with EU requirements for operation on the IÉ-IM network. BBRI is thus a railway undertaking as defined in point (1) of Article 3 of Directive 2012/34/EU and is treated in the same way as any other railway organisation. In this context BBRI has been the subject of a strategic management review by the CRR, focusing on the implementation of Criterion G, as well as Criteria F, H and I of the Commission Regulation (EU) No. 1158/2010 on a common safety method for assessing conformity:

- *G – Securing Control by Management on Different Levels*
- *F - Distribution of responsibilities*
- *H – Involving staff and their representatives on all levels, and:*
- *I – Ensuring Continuous Improvement*

A summary of findings from the audit is as follows:

- 0 Major Non Compliance
- 4 Minor Non Compliances
- 4 Action Required
- 3 Scope for Improvements
- 8 Good Practices
- 0 Audit Trails

The key issues that will require attention as a result of the audit include:

1. Role profiles need attention to align them with the SMS Manual and to ensure that role holders are familiar with all the requirements contained within their profile.
2. Formalisation of the Safety Coach role to align with the requirements of the SMS Manual.
3. Correction of documentation control issues noted by the auditors.

Overall the auditors were of the opinion that BBRI had a good and appropriate SMS, supported by a very strong safety culture at all levels of the organisation.

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Glossary of Terms

Term	Meaning / Definition
AR	Action Required
BBRI	Balfour Beatty Rail Ireland
CRR	Commission for Railway Regulation (the NSA for Ireland) formerly the Railway Safety Commission
CSM	Common Safety Method
CST	Common Safety Target
DRRA	Director Responsible for Rail Activities
ESG	Executive Safety Group
EU	European Union
HOOPI	Head of Operations Plant Ireland
IÉ-IM	Iarnród Éireann-Infrastructure Manger
MAP	Mission Alignment Process
NC	Non Compliance
NSA	National Safety Authority
OTM	On Track Machine
PCD	Planned Completion Date
PDR	Personal Development Review
PHOO	Professional Head of Operations
PHOE	Professional Head of Engineering
SHEQ	Safety, Health, Environment, Quality
SMS	Safety Management System
SRS	Safety Responsibility Statement

1 Introduction

1.1 Overview

The Commission for Railway Regulation (CRR) is the National Safety Authority (NSA) (in respect of railways) in the Republic of Ireland. In accordance with the Railway Safety Act (2005), as amended by Statutory Instrument No. 444, the CRR is required to supervise a railway organisations' continued application of their Safety Management System (SMS), once they have been granted a safety certificate.

Balfour Beatty Rail Ireland (BBRI) Ltd operate and maintain Iarnród Éireann's (IÉ-IM) fleet of On-Track Machines (OTMs). The movement of the OTMs from depot to worksite, and between worksites, requires BBRI to be in possession of a safety certificate confirming the conformity of their SMS with EU requirements for operation on the IÉ-IM network. BBRI is thus a railway organisation as defined by the Railway Safety Act 2005 and is treated in the same way as any other railway organisation. In this context BBRI has been the subject of a strategic management review by the CRR, as reported in this document.

BBRI's head office is based in Northern Cross, Dublin. It has a single SMS Manual for its complete business for which they hold both a Part A and Part B safety certificate issued by the CRR in February 2014. The BBRI organisational structure is relatively simple with an operations team, a contract management team, and a single Safety, Health, Environment and Quality (SHEQ) Manager who is independent of the line. It is, however, slightly more complicated by the reliance on and reporting lines to the parent UK Company.

1.2 Audit Objectives and Scope

The audit was undertaken to fulfil the principal objectives of identifying:

- BBRI's compliance against requirements outlined in Commission Regulation (EU) No. 1158/2010 on a common safety method for assessing conformity with the requirements for obtaining railway safety certificates, specifically Criteria;
  - *G – Securing Control by Management on Different Levels*
  - *F - Distribution of responsibilities*
  - *H – Involving staff and their representatives on all levels, and:*
  - *I – Ensuring Continuous Improvement*
  - *Other criteria as necessary*

1.3 Audit Details

The 'on-site' audit activity took place during May and June 2017 as follows:

1. BBRI's head office at Northern Cross in Dublin, 29th and 30th May 2017
2. BBRI's Depot at Kildare, 31st May 2017
3. Balfour Beatty Rail Ltd (UK), 2nd and 12th June 2017 (various London locations)

An interview with BBRI's client, IÉ-IM, at their Inchicore Depot 1st June 2017 also took place. The audit interviews were conducted by DNV GL Ltd. consultants (auditors representing the CRR) and were attended by a CRR Inspector (with the exception of those on the 31st May 2017 and 2nd June 2017) primarily in an observational capacity, but also to clarify and follow-up on any matters arising.

The full schedule of audit activities is given in Appendix A.

1.4 Methodology

1.4.1 The Audit Process

The audit included:

1 A high-level review and examination of BBRI and its SMS Manual (and related documents) primarily in relation to criterion G, F, H and I.

2 Interviews with individuals identified by the CRR as relevant to the audit or individuals identified in the safety management standards.

3 A review of documentation (evidence) seen and/ or collected by the auditors. The list of evidence is recorded in Appendix B.

An audit plan was produced by the CRR [B.00.00] and key elements of this were presented to BBRI personnel in advance of the audit to allow suitable preparation and agreement on the audit schedule.

1.4.2 Audit Outcomes

Contained within the main body of the report non-compliance (NC) and action required (AR) items are identified. In addition, areas where there is 'scope for improvement' are highlighted. Where possible, they are made specific, measurable, achievable, realistic and time-bound (SMART). Where particular good practice (GP) is noticed, or further consideration of the topic is identified through an audit trail (AT) these are also recorded. The audit outcomes are classified as follows;

Major Non Compliance (MaNC): an area of non-compliance with a BBRI internal standard, an applicable external standard, or legislation that is evidence of a system failure.

Minor Non Compliance (miNC): an area of non-compliance with a BBRI internal standard, an applicable external standard, or legislation that is evidence of a sporadic lapse in implementation of a system or deviation from a system.

Action Required (AR): an area where potential exists for a non-compliance to occur unless remedial action is taken or improvement is made, an isolated error that requires correction, or some other issue where, in the opinion of the auditor action is necessary.

Scope for improvement (SFI): an area highlighted where, in the opinion of the Auditor, system or business improvement can be achieved by the company. Typically this is phrased as a recommendation, the merits and implementation of which should be decided by audited organisation.

Good Practice (GP): an area highlighted which, in the opinion of the Auditor, is good practice within the industry.

Audit Trail (AT): an area that the auditor feels should have further attention, either by inclusion in the programme for future audits (but not necessarily an external audit item) or by some other means.

The format in which an audit outcome may be given is shown below.

22/17-A-AR XX -Title (high level descriptor of identified issue)
Detail as required
PCD: (Planned completion date only specified for 'Non Compliances' and 'Action Required' items).

Figure 1 – Audit Outcome Format

1.4.3 Evidence References

As is common practice when auditing, auditors are expected to seek evidence whenever possible to verify statements made by interviewees, to confirm that an activity has taken place or to demonstrate a procedure/standard exists. This is no different for CRR Inspectors when conducting an audit.

Contained within the report, and specifically in section 3, references are made to items of documentary evidence received through the course of this audit. Such references are shown in square brackets with a letter 'B' prefix, followed by a number e.g., [B.02.08]. Every interviewee has been assigned a unique number starting at 1. For example the SHEQ manager might be number 9. Thus documentary evidence supplied in support of compliance by this individual would be numbered B.09.01, B.09.02 etc. with each individual piece of evidence having its own unique number.

This methodology aids traceability and enables the CRR to clearly link audit outcomes to items of evidence.

2 Background

Balfour Beatty Rail Ireland (BBRI) operate and maintain On Track Machines (OTM's) on behalf of IÉ-IM which is used to maintain the railway track to the required engineering specification.

BBRI is a standalone business unit employing 56 persons within the rail business of Balfour Beatty, a UK based construction firm with approximately £8bn turnover. As such BBRI does not have a Board of Directors itself, but fits into the governance structure of the parent organization Balfour Beatty.

BBRI's staff comprises of a number of machine operators and fitter groups which are located throughout Ireland. BBRI's resources also include a large store holding of parts and materials covering numerous models of OTM's such as Plasser, Matisa, and Geismar. Heavy lifting facilities are provided at BBRI's Plant and maintenance depot at Kildare where scheduled maintenance is carried out. BBRI also provides mobile breakdown and repair support to operational staff while out on site with a wide geographical spread.

BBRI has developed an SMS Manual [B.02.26] underpinned by supporting standards and procedures. These collectively detail the arrangements in place for safety. The SMS Manual is helpfully arranged in a structure that mirrors the relevant criteria within the Common Safety Method for Conformity Assessment based on EU Commission Regulation 1158/2010 (i.e. broken down into Criteria).

3 Audit Findings & Outcomes

3.1 BBRI SMS Manual Overview

The BBRI SMS Manual was produced specifically for this business unit and first issued February 2014. The revision history shows attention being given to the document with updates being made during most of the remainder of 2014. Since then the document has been subject to annual review and minor changes as required.

BBRI operates a matrix reporting structure as shown in Figure 2 (below).

Ultimately the Head of Operations Plant Ireland (HOOPI) is responsible for safety leadership in BBRI and is accountable in this to the Director Responsible for Rail Activities (DRRA). The leadership team in BBRI report into the HOOPI but have an additional dotted line accountability into their functional lead; for example, the SHEQ Manager reports day to day to the HOOPI and functionally to the Director of Safety. Similarly, the M&R Manager reports to the Professional Head of Engineering (PHOE). All the members of the leadership team are expected to show safety leadership for their respective area and are accountable in this both to the HOOPI and their functional lead. In this way leadership responsibility is distributed throughout BBRI and not confined to a single individual. There is additionally ample opportunity for independent functional experts (in safety, engineering, operations) to independently verify or challenge the performance being reported by the HOOPI.

To control the interface arrangements a series of meetings and regular dialogues are in place to manage these responsibilities, including:

- Regular visits of UK personnel to BBRI HQ.
- UK personnel attendance at scheduled meetings in Ireland.
- Attendance of HOOPI at scheduled meetings in the UK
- Virtual meetings via conference call.
- Telephone support.
- Email.
- PULSE Meeting (weekly meeting for all BBRI units held on a Monday to share immediate outcomes from operational performance and safety incidents following weekend working, followed by a more in depth meeting on the following Tuesday to review these in detail).
- Safety Coaches meeting in the UK to share experience

Other operational interfaces exist, predominantly with IÉ-IM undertakings which operate on the railway. Risks associated with these interfaces are usually addressed by following BBRIs and IÉ-IMs interface management procedure [B.01.13].

Where appropriate, specific examples of these interface arrangements are discussed in the following sections.

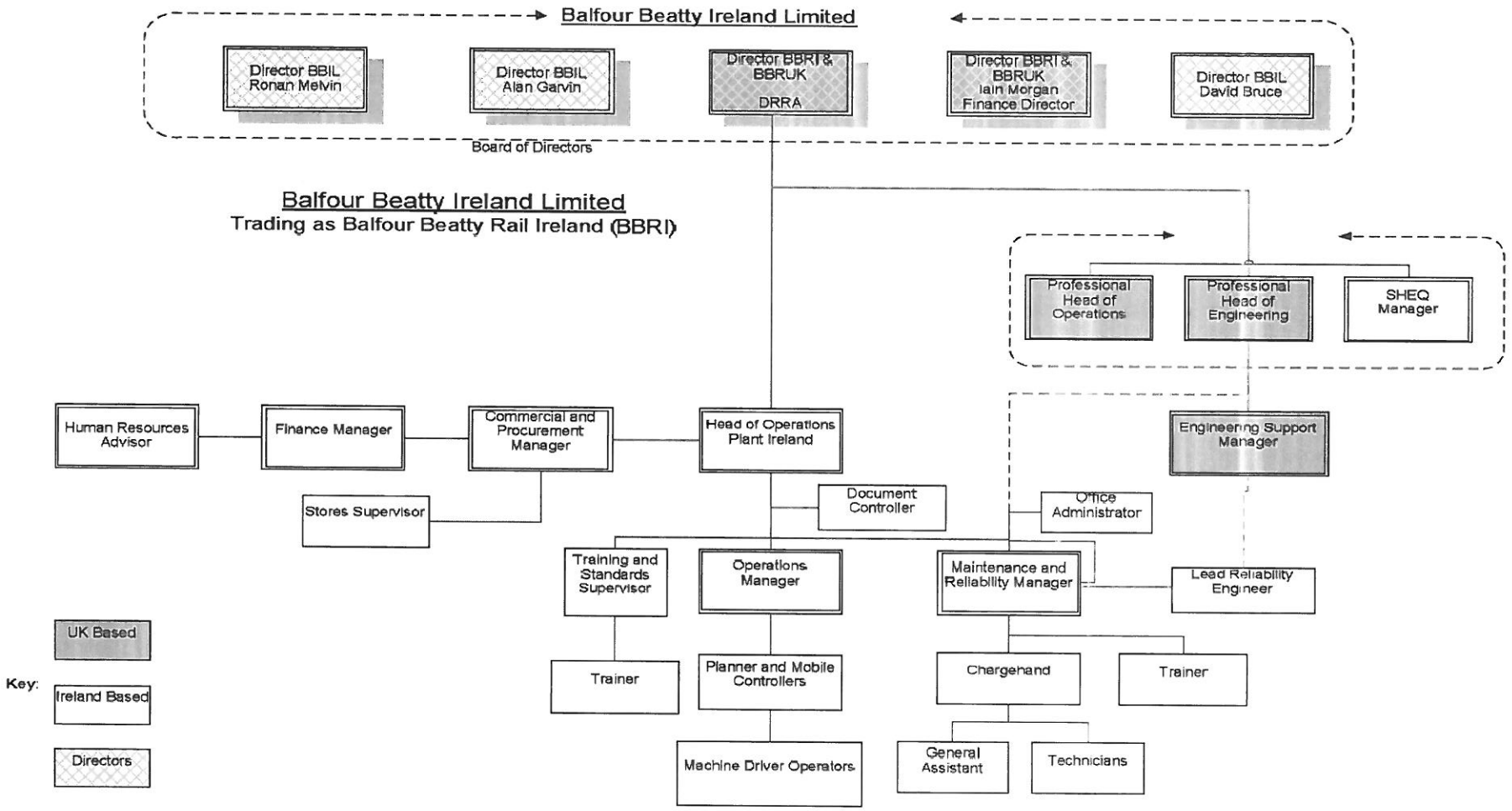

Figure 2 – BBRI Organisational Chart

3.2 BBRI SMS Manual General Comments

In consulting the BBRI SMS the auditors noted the following minor points that whilst not specifically related to the audit scope are included for BBRI's consideration.

22/17-A-SFI-1 Review of SMS and other documents

The next due review date is stated in the SMS Manual; this is useful as a reminder and for planning purposes.

However, should a review be completed and no updates made (hence no new revision being required) it is not clear how this would be identified. BBRI may wish to consider how this situation could be catered for within the SMS document (e.g. the document footer could be amended to include "Last review dd/mm/yyyy" in addition to the existing "Review before dd/mm/yyyy").

22/17-A-AR-1 Correction of "Review before" dates in SMS Manual.

The SMS Manual has different review before dates for different sections, e.g. pages 17 to 21 state a review before date of 01/04/2017 whereas preceding pages state 01/04/2018.

PCD: At next update of SMS Manual

3.3 Criterion G - SECURING CONTROL BY THE MANAGEMENT ON DIFFERENT LEVELS

The findings of this audit in relation to Criterion G, as well as Criteria F, H and I of Commission Regulations (EU) No. 1158/2010 are presented below.

3.3.1 G.1 There is a description of how responsibilities are allocated for each safety-related process throughout the organisation.

The mechanism for delivering the objective of responsibility allocation and delegation is principally through role profiles, with these clearly indicating responsibilities and duties for safety for all positions. All individuals questioned were familiar with the individual role profiles and had signed their role profile documents indicating their acceptance.

22/17-A-GP-1 Acceptance of Role Profiles

Requiring individuals to sign for and demonstrate understanding and acceptance of their responsibilities is considered an efficient means of demonstrating compliance.

Some checks on the detail of the role profiles were made.

Within the SMS Manual roles and responsibilities are defined. A spot check of one of the roles and its compliance with the SMS Manual was made. The SMS Manual at Section 5 states that the "*SMSM is reviewed annually by the DRRA...*" On inspection, duties within the DRRA role profile included "*Ensures there is a current Safety Policy and Safety Management System in place*" but this in the auditor's view falls short of a requirement to "*review*" the SMS Manual. It is noted that within the same role profile a requirement to "*Review the Health and Safety Policy annually*", is included with this being more explicit.

22/17-A-miNC-1 Review Role profiles for compatibility with SMS Manual

The DRRA requirements identified in the SMS Manual were not explicit in the relevant role profile for that position (alternatively the description in the SMS Manual should be modified). This should be checked and updated. It may apply to other roles not checked by the auditors.

Considering the role profiles more generally, these include some generic statements, e.g.:

- *"Will comply with the requirements of the European Safety Directive, Railway Safety Act 2005, H&S legislation and the SMS relevant to the company and promote compliance and understanding within their team."*

When questioned, some individuals were not familiar with the referenced Directives and what this meant in the context of their work. This is despite the fact that the role profiles were signed and accepted by the role holder.

22/17-A-miNC-2 Review Role profiles to identify training requirements

Role profiles refer out to specific legislative requirements that individual role holders were not familiar with. It should be confirmed that individuals receiving and accepting their role profiles are fully familiar with its content, and receive training if not; alternatively, if the requirement as stated in the legislation requirement is not applicable BBRI may consider its removal.

Further, in some cases the role holder was not aware of the tasks or activities that made their role "safety critical"; an understanding of why their role falls into this category may be beneficial.

22/17-A-miNC-3 Role Profile and Safety Criticality

Role profiles identify if a role is considered safety critical but role holders are not aware of the specific tasks or activities that make their role "safety critical". It should be confirmed that individuals receiving and accepting their role profiles are aware why their role is safety critical, where this is the case.

Finally, in one case [B.05.36] the role profile held by the role holder as a personal copy was out of date.

22/17-A-AR-2 Incorrect Role Profile.

A role profile provided was not the latest revision and indicated the role was not safety critical, which is incorrect. It should be checked all role holders have the latest version of their role profile.

PCD: Within next four months.

3.3.2 G.2 There is a procedure for regular monitoring of task performance assured by the line management chain that must intervene if the tasks are not being properly performed.

3.3.2.1 Overview

BBRI operate a safety monitoring programme that is described in their Safety Monitoring Procedure [B.01.14]. This includes the following requirements:

- Planned General Inspections.
- Management Operations shift report checklist.
- ESG Safety Tour.
- Office Inspections.
- Site Environmental Inspection.
- Annual Audit programme, both first (by BBRI leadership team), second (by PHOE, PHOO and BB internal audit team in UK) and third party (National Standards Authority of Ireland).

These are supported by requirements for task performance monitoring that include.

1. A program of task assessments and observations.
2. A set of task risk assessments (B.01.17 and B.05.37).
3. Training programmes and competence management systems as required by Criterion N.
4. Requirements inherent in role profiles.
5. A series of safety tours.

To support these procedural controls it was noted that, in the auditor's view, a strong safety culture was in place. This strong safety culture would firstly encourage individuals to take pride and responsibility for their tasks, and to challenge sub-standard work practices were any identified. Anecdotal evidence was provided that there had been a marked positive change in safety culture over the time BBRI had been in place. In many ways these features are the most important building blocks of good safety performance. Evidence of this culture can be seen in the Close Call system that returns about 35 reports a month. These identify a range of safety issues from the routine to more bespoke and unique issues and hazards that indicate an inquisitive organisation that feels empowered to challenge where this is required.

22/17-A-GP-2 Safety Culture.

The strong safety culture that appeared evident at all levels within the organisation gives confidence that personnel would not knowingly produce bad work, and that in the event of lapses occurring these would be addressed once they were identified.

3.3.2.2 Implementation

We consider two cases where intervention may be required as a result of monitoring: where there is a systemic failure (e.g. an incorrect instruction, working practice or condition); individual lapses.

Systemic Failures by their nature are likely to be identified over a period of time through monitoring and feedback mechanisms.

For BBRI these are addressed by procedural controls such as task assessments [B.01.17 and B.05.37], ESG Safety Tours [B.02.20] and Audits [B.01.01] etc. together with analysis and monitoring through discussion fora and meetings. Central to this process are the monthly Executive Safety Group (ESG) meetings [B.09.55] which provides a structure and forum for

discussion of relevant safety issues and for establishing the requirement for intervention to address an underlying problem.

These procedural controls may be supplemented by the Close Call system as a mechanism for the identification of recurring issues that warrant intervention. Numerous examples were provided where this system has led to action to remove or mitigate a potential safety hazard. Examples include safe access to the top of OTMs [B.01.09] that is presently being addressed (this is an example of an unsafe condition that could in turn lead to "work arounds" and thus improper or incomplete maintenance).

It is also clear from the Risk Register [B.02.27] that hazards continue to be identified and receive attention. For example *"Checking that vehicles are working properly following maintenance. Post exam test Maintenance after a service"* was added to the risk register February 2017.

22/17-A-GP-3 Acting on Information.

It is clear that BBRI actively seek information on issues that may be a safety concern, and that these receive appropriate attention at all levels within the management structure.

Individual lapses may also occur from time to time. Mechanisms to control this – in addition to those discussed above - include the Point of Work Assessment which is an electronic form requiring a specified set of tasks to have been confirmed to have been completed before it can be signed off.

Relying on these formal measures cannot however capture all lapses. In some cases, a lapse or error may not be detectable by these controls and the individual making the error may be reluctant to disclose it if they subsequently identify it. In this regard we again refer to the strong safety culture encapsulated by the phrase *"bad news early is good news"* often quoted during the audit. Anecdotal evidence was provided of equipment being recalled and/or maintenance activity being halted as a result of such lapses or errors (and/or other unsafe conditions) subsequently being identified. The auditors were left with little doubt that there would be little reluctance to report such issues and that suitable intervention would be taken to remedy the situation.

Finally, we note that the Close Call system has identified some previously unrecorded hazards, such as whether the depot floor would support the weight from certain jacking operations. It is commendable that BBRI personnel would consider and raise such potential hazards. To seek to determine the existence of other previously unrecorded hazards (or improvements to working practices) an activity to test current activities for new hazards or new causes could be considered.

22/17-A-SFI-2 Identification of new hazards.

BBRI tasks could be subject to a "brainstorm" or cold eyes review on a regular basis to identify possible new/ changed / or previously unidentified hazards and causes associated with an activity/ task. Where applicable new or additional control and interventions may be identified.

3.3.3 G.3 There are procedures to identify and manage the impact of other management activities on the safety management system.

There were no specific issues raised during interview that would highlight this as a concern within BBRI.

Within BBRI's SMS Manual there is no specific mention of procedures to address this issue, rather it is dealt with as part of individual responsibilities and the reporting and monitoring schemes that are in operation at present. Notable amongst these are the Risk Assessment Procedure [B.02.23] and the associated risk register. Review of the latter shows it to include specific task related hazards and hazards associated with management activity, e.g.:

- Introduction of new machine or module
- Management failing to take effective action
- Poor supplier management

All entries are shown as hazards, with hazard controls and then risks following the application of these controls. This is considered a suitable mechanism for the management of these issues. There is also clear evidence that items on the risk register are addressed until a conclusion is reached, supported by anecdotal evidence to this effect.

The Close Call system previously mentioned would be a mechanism for identifying emerging issues even should these issues be of a non-operational nature. The annual Safe Start event – an open forum where BBRI employees can identify their top risks – is also a mechanism meeting this objective. The latter identifying the management of work shift scheduling as a cause for concern in addition to issues associate with poor PPE and out of hours' welfare facilities.

Noting that there do not appear to be specific procedures in place addressing the remit of G3, BBRI should make it explicit how this is dealt with.

22/17-A-miNC-4 Addressing Criterion G3

The mechanism to address the requirements of criterion G3 is not clearly defined in the SMS, although considered to be covered implicitly.

3.3.4 G.4 There are procedures to hold those with a role in the management of safety accountable for their performance.

Moving on from the controls in place as discussed in G.3 the BBRI personal development review (PDR) is a method by which an individual's performance is evaluated. It is stated in the SMS Manual as follows:

- *"The performance appraisals are part of BBRI's career development programme and consist of regular reviews of employees within BBRI. The performance appraisals are in place to assess employee's performance and productivity in relation to certain pre-established criteria and BBRI objectives. It is the responsibility of management to carry out a review every 6 months, the function is to provide feedback to employees, counsel and develop employees and convey and discuss compensation, job status or if applicable any disciplinary decision(s)."*

All employees advised that they were subject to a PDR although they were not able to provide them as evidence because they contain personal information. In interview it was stated that PDRs had been undertaken for all employees on a regular basis and that these

linked to training/competence needs. An excel record of the dates of employee PDRs was provided of evidence that they were being undertaken [B.05.56].

Other forms of monitoring include safety performance data collected and reported to the ESG and include possession irregularities, SPADs, damage caused and lost time incidents. BBRI also co-operate proactively with IÉ-IM during investigations, with this confirmed by IÉ-IM personnel interviewed.

Where these activities identify a need, re-training or corrective action was seen to be implemented and generally as a learning opportunity rather than a punishment.

22/17-A-GP-4 Positive attitude to learning opportunities.

A good level of monitoring of safety performance was evident, including proactive and collaborative approaches working with external parties.

3.3.5 G.5 There are procedures to allocate resources to deliver the tasks under the safety management system.

Audit interviews did not identify lack of resources as a specific issue although some concern was raised with regard to succession planning and integrating new starters into the organisation. It is noted that this is included in the risk register [B.02.27].

The work planning process can lead to operational resource constraints. The process is normally initiated on a Thursday for work to start the following Monday, with BBRI responding on the Friday. Sickness or other absences can occasionally lead to shortages of resource. During interview it was declared that this has resulted in shifts being cancelled. In this regard the BBRI SMS Manual has clear statements assigning resourcing responsibility to the DRRA via the Head of Operations Plant Ireland (HOOPI). Evidence (declared during interview) was provided that the HOOPI and DRRA would and did support operational decisions to cancel or curtail work for resource or other reasons, despite this being unpopular with the client.

The HOOPI also has access to BBR UK's resources if required, usually with regard to Plant maintenance activities. Evidence of this was provided through a reliability team being dispatched to assist with work on one of BBRI's tampers.

BBRI has a Company Safety Statement as required by Irish Legislation, this Safety Statement covers the activities of BBRI staff and other parties and the resources allocated to ensure the safety, health and welfare of its staff. It is based on the requirements outlined in the Safety, Health and Welfare at Work Act 2005.

22/17-A-GP-5 Willingness to put safety first.

Resourcing appears to be under control, and potential future resourcing challenges identified and recorded. Management support of operational resourcing decisions, despite these potentially being unpopular was demonstrated.

3.4 Criterion F – DISTRIBUTION OF RESPONSIBILITIES

3.4.1 F.1 There is a description of how coordination of safety management system activities across the organisation is ensured, based on proven knowledge and lead responsibility at management level.

F.3 Safety-related areas of responsibility, and the distribution of responsibilities to specific functions associated with them, together with their interfaces, are clearly defined.

The annual BBRI Strategic Plan provides direction for the business. It includes initiatives from the BB Group, together with selected local initiatives. Its goals for 2017 are:

- Everyone goes home safe every day
- Reduce Abatement – BBRI target is to reduce abatement to or below 5%
- Succession Planning – training and developing our team
- Delivering all 1062 service shifts
- Root cause Analysis of faults
- Customer Satisfaction – in association with our Mission Alignment Process (MAP)
- Forward Thinking Business
- Focus on top 5 risks identified during the safe start
- Maintain our ISO9001:2015, ISO14001:2015 and OHSAS18001 accreditation
- Achieve the business specific Safety, Health, Environmental and Quality objectives outlined in Appendix A
- Achieving Entity in Charge of Maintenance certification

The HOOPI has overall responsibility for the delivery of the Plan, and its achievement is coordinated and monitored via the arrangements shown in in Figure 3.

22/17-A-GP-6 Safety Goals.

Safety (and business) goals are set annually and reviewed on a recurring basis at scheduled stages by a suitably qualified management team. The workforce are engaged in these through the annual Safe Start event.

Maintenance of SMS Manual itself is allocated to the DRRA as previously stated. Evidence this activity is being discharged has also previously been verified in this document.

It is noted that the SMS Manual does not contain all safety meetings that take place (e.g. Safe Start, "Have your say" etc.) although this is not considered a material omission.

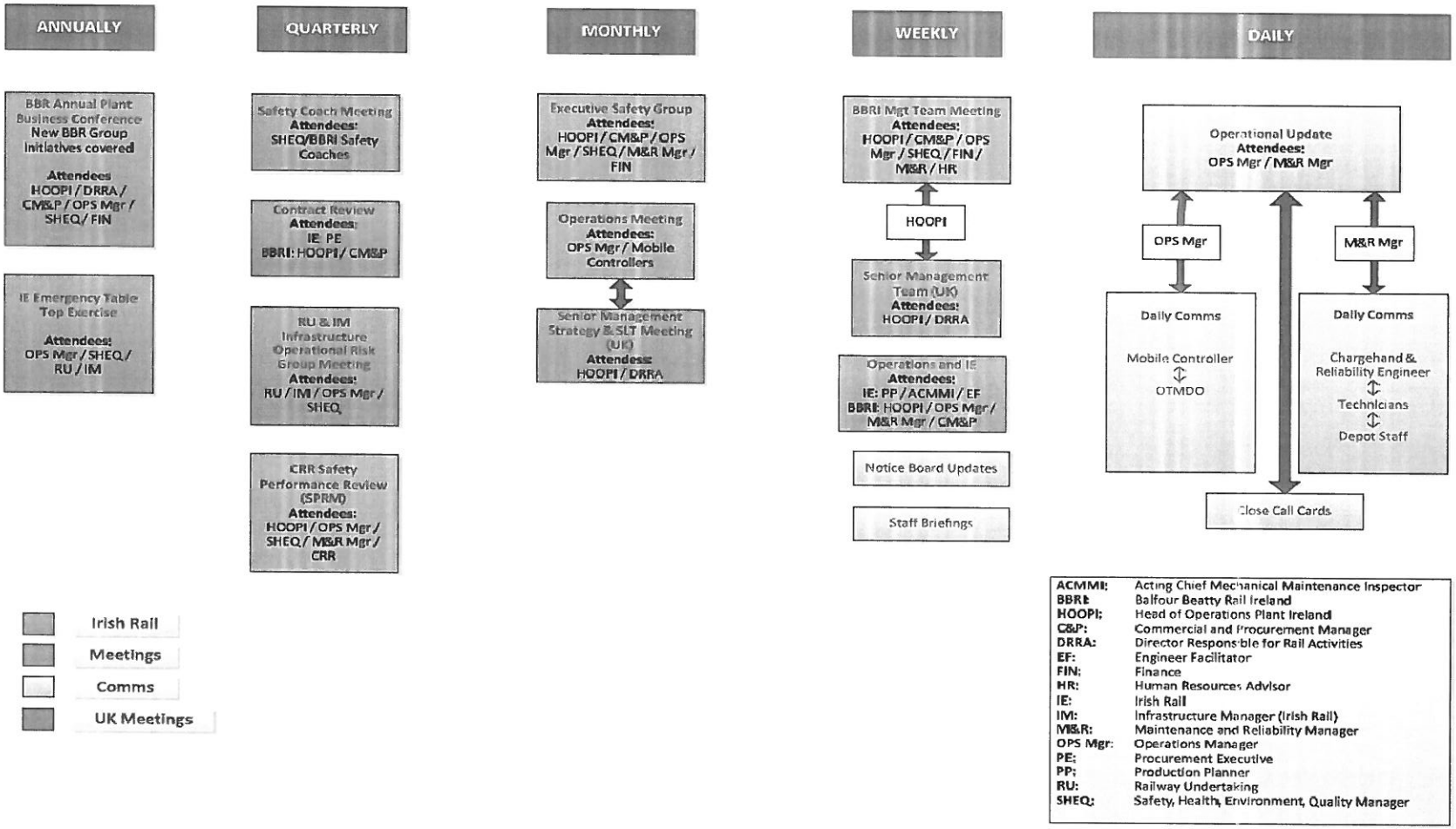

Figure 3 - BBRI Communications and Meetings Schedule

3.4.2 F.2 There are procedures to ensure that staff with delegated responsibilities within the organisation have the authority, competence and appropriate resources to fulfil their duty.

Responsibilities for competency assurance are contained within the SMS Manual and role profiles. For example, the Engineering Support Manager has the following defined responsibility for competence:

- Safety Competence amongst engineering staff and the analysis of machine data to improve On Track Plant reliability.

In turn it is the Professional Head of Engineering (PHOE) role that has the responsibility for ensuring appropriate competencies are reviewed annually.

The Competence Management System is used to assess and record maintenance staff competence, in accordance with IMP/RP/SAF/23 Competence Assessment and Verification Management Procedure (not seen by the auditors). It is noted that the Audit Plan addresses the competency system.

Some specific competencies are a shared responsibility with IÉ-IM, specifically driver training. One area of concern identified by BBRI is in route knowledge in that their drivers have to operate across the entire Irish network and thus require a wider route knowledge than some train drivers and additionally may only travel these routes on an occasional basis. BBRI have sought to help by producing videos of the route that can be viewed prior to travel to reinforce existing route knowledge.

3.4.3 F.4 There is a procedure to ensure that safety tasks are clearly defined and delegated to staff with appropriate competence.

Safety responsibilities are contained within role profiles for all personnel, including those that are safety critical. The role profile covers separate sections for:

- Purpose
- Prime Safety Responsibilities
- Statutory Duties
- Specific Safety Duties
- Medical Fitness
- Key Responsibilities
- Key Performance Indicators
- Skills, Experience and Qualifications
- Safety Responsibility Statement

A sample role profile [B.05.36] was provided as evidence of this. It lists thirteen specific safety duties and 36 key responsibilities. These specify the safety tasks appropriate for the role and the competence (as expressed as skills, experience and qualifications) necessary. The signing of this indicates agreement that delegated tasks have been understood and the individual signing considers themselves appropriately competent. The PDR review provides ongoing consideration of performance against these and the ongoing competence

requirements of the role and the key performance indicators a means of assessing performance.

Safety tasks are then further defined in terms of risk by the task risk assessments [B.01.17 and B.05.37] which identify mitigating actions to risks which are in themselves then safety tasks.

3.5 Criterion H - INVOLVING STAFF AND THEIR REPRESENTATIVES ON ALL LEVELS

3.5.1 H.1 There are procedures in place to ensure that staff and staff representatives are adequately represented and consulted in defining, proposing, reviewing and developing the safety aspects of operational procedures that may involve staff.

It is clear that BBRI take this responsibility seriously, and address the requirement using many means.

BBRI has two safety stand downs each year at which the leadership team is present. The first of these is the "Safe Start" at which the strategy for the year is discussed with staff who are invited to identify what they consider to be the five most significant risks (in 2017 seven such risks were identified). These risks are then taken forward as issues for the leadership team to address. The second is the "Boots on the Ground" which reviews the year to date. The UK based DRRA would normally attend at least one of these.

The Close Call is another mechanism that was seen by those interviewed as a mechanism for providing feedback. Importantly, the use of the Close Call system was acknowledged and responded to in a positive manner that interviewees considered showed BBRI to place safety above other considerations, even if this was at a financial disadvantage.

BBRI has three appointed Safety Coaches. Safety Coaches act as a conduit between employees and management if this is needed, as shown in Figure 4.

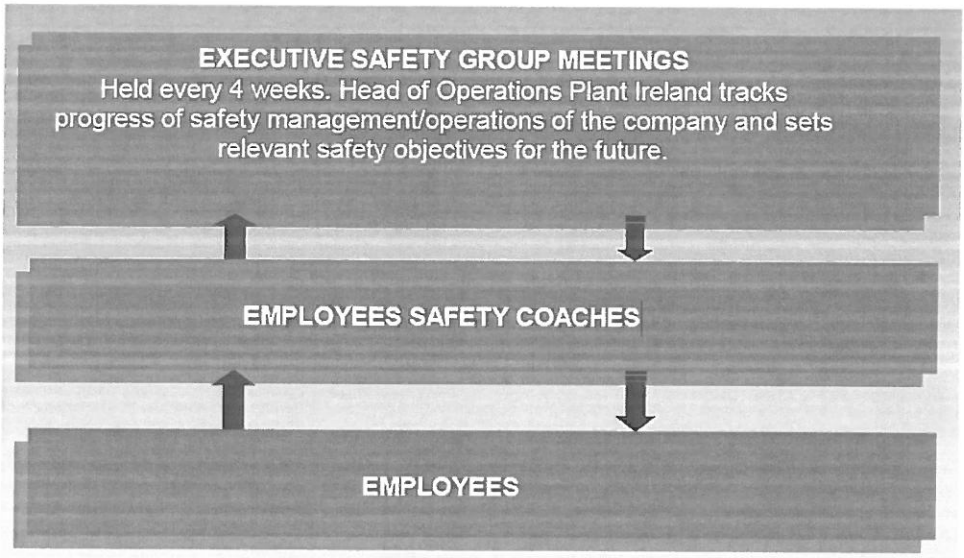

Figure 4 - BBRI Safety Coach Interfaces

22/17-A-GP-7 Staff Involvement.

There is a clear desire within BBRI to encourage and involve all staff in the on-going development of safety performance, and a positive safety culture that encourages that.

Considering the Safety Coach role, the SMS Manual (e.g. Figure 4 above) implies this is a formal role although these roles are voluntary. It is understood that Safety Coaches attend ESG meetings, although this is not made explicit in the SMS Manual at 6.6.1. Further information – for example the ratio of Safety Coaches to employees, the length of time the appointment is made for etc. could be clarified

22/17-A-AR-3 Role of Safety Coach.

BBRI should develop a procedure to formalise the role of the Safety Coach.

PCD: Within next three months.

3.5.2 H.2 Staff involvement and consultation arrangements are documented.

There is clear evidence that the staff consultations are documented. For example the Safe Start consultation program forms part of BBRI Strategy [B.01.16] which includes employees "top 5" risks. These are then monitored via the ESG and other meetings.

There is also a highly visible management presence and no reluctance on the part of employees to raise local issues when the opportunity arises and this may be considered a form of consultation that may result in a Close Call which is a documented record.

In audit interviews staff were aware that risk assessments were available and while they were clearly competent in what they were doing were not aware of the content of the risk assessment or what the key controls were. This would suggest that there is an opportunity to improve engagement with the workforce in terms of providing the key controls they need to be aware of in the tasks they undertake.

22/17-A-AR-4 Key Risk Controls.

BBRI to make the key controls contained in a risk assessment visible to those undertaking the task to better improve engagement with the workforce.

PCD: Within next four months.

3.6 Criterion I - ENSURING CONTINUOUS IMPROVEMENT

There are procedures in place to ensure, where reasonably practicable, the continuous improvement of the safety management system; these shall include:
(a) procedures for periodic reviews of the safety management system, as found to be necessary;
(b) procedures for describing arrangements to monitor and analyse relevant safety data;
(c) procedures for describing how identified shortcomings are rectified;
(d) procedures for describing the implementation of new safety management rules based on development and lessons learnt;
(e) procedures for describing how internal audit findings are used to bring about improvement in the safety management system.

(a) procedures for periodic reviews of the safety management system, as found to be necessary;
An annual review of the SMS Manual is scheduled and is clearly being delivered. Individual responsibilities are assigned to achieve this objective and monitored as part of the PDR process.

(b) procedures for describing arrangements to monitor and analyse relevant safety data;
These arrangements are described in Section 6.9.1 of BBRI's SMS Manual:

- Commitments made by the DRRA in the BBRI Safety Policy Statement.
- Compliance with all applicable railway safety and health and safety legislation, together within industry standards.
- A robust monitoring and audit programme to ensure continuous improvement of the SMS.
- Adequate control of all categories of risk and Railway Safety Certificate requirements.
- Maintenance, and improvement where necessary, of safety performance in line with the Common Safety Targets (CSTs) and Balfour Beatty Group internal safety targets.

Mechanisms to achieve these include PDR, ESG and audit activity which has previously been evidenced within this report.

(c) procedures for describing how identified shortcomings are rectified;
Shortcomings are identified through mechanisms that include:

- Safety dashboard reporting.
- Close Call analysis.
- Investigations (within and external to BBRI).
- ESG Meetings and analysis.

These are covered in detail throughout this report.

Rectification may include adding a risk to the risk register, or an action raised usually at the ESG Meetings.

22/17-A-SFI-3 Actions to include success measure.

It has been noted that actions raised at ESG Meetings often do not include a statement how the success or otherwise of that action is to be assessed. Inclusion of a measurable success statement may aid future action close-out efforts.

(d) procedures for describing the implementation of new safety management rules based on development and lessons learnt;
Lessons learnt from investigations, reviews and feedback may necessitate changes to the SMS Manual or supporting producers.

BBRI operate a Safety Cascade programme as part of monthly review meetings. Staff interviewed confirmed their attendance at these meetings and the Safety Cascade element of them.

(e) procedures for describing how internal audit findings are used to bring about improvement in the safety management system.
Internal auditing is the prime responsibility of the SHEQ Manager and Operations Manager who develop an audit programme using input from the PHOE regarding engineering related activities. An audit programme was provided as evidence [B.01.01].

In selecting internal audit topics there is a degree of reacting to business needs. For example, the 2017 programme states "*Criterion H was selected as it was not audited in 2016 and feedback from the workforce have requested more engagement from management. Criterion J how is the safety policy developed and communicated.*"

22/17-A-GP-8 Targeted audits.

Including audits to address specific business needs and perceptions shows good safety leadership.

Audit results are addressed at ESG Meetings, which includes results as an agenda item.

4 Conclusions & Next Steps

4.1 Conclusions

The CRR's audit of BBRI, focussing on securing management control at different levels, was performed in accordance with the audit plan [Ref: B.00.00]. The level of co-operation and openness of the staff involved allowed the auditors to address effectively the objectives of the audit.

The audit across the BBRI business demonstrates that, in the main, systems are in place and are followed.

Supporting the written procedures is a strong safety culture which was observed at all levels. BBRI does not operate a blame culture which in turn feeds the desire of staff to provide constructive feedback and subsequent management action; this closed loop process is a very good trait and in many ways, is self-perpetuating.

The audit raised more Good Practice comments than those requiring action, and this is a strong indicator of BBRI's excellent safety performance overall.

A summary of findings from the audit is as follows:

- 0 Major Non Compliance
- 4 Minor Non Compliances
- 4 Action Required
- 3 Scope for Improvements
- 8 Good Practices
- 0 Audit Trails

4.2 Next steps

As is normal, when non-compliances are identified, the railway organisation is required to submit an Improvement Plan in accordance with section 76 of the Railway Safety Act 2005. Accordingly, BBRI are required to submit to the CRR an Improvement Plan. This should address the non-compliance by identifying the root cause of the non-compliance where possible and outlining the corrective action that will be taken to rectify it. A timescale for its rectification should also be provided. The CRR will review this submission and, subject to it being satisfactory, will track its implementation.

5 Summary of Findings

5.1 Major Non Compliance

None raised.

5.2 Minor Non Compliance

Number	Area
22/17-A-miNC-1	The DRRA requirements identified in the SMS Manual were not explicit in the relevant role profile for that position (alternatively the description in the SMS Manual should be modified). This should be checked and updated. It may apply to other roles not checked by the auditors.
22/17-A-miNC-2	Role profiles refer out to specific legislative requirements that individual role holders were not familiar with. It should be confirmed that individuals receiving and accepting their role profiles are fully familiar with its content, and receive training if not; alternatively, if the requirement as stated in the legislation is not applicable BBRI may consider its removal.
22/17-A-miNC-3	Role profiles identify if a role is considered safety critical but role holders are not aware of the specific tasks or activities that make their role "safety critical". It should be confirmed that individuals receiving and accepting their role profiles are aware why their role is safety critical, where this is the case.
22/17-A-miNC-4	The mechanism to address the requirements of criterion G3 is not clearly defined in the SMS, although considered to be covered implicitly.

Table 1: Minor Non-Compliances

5.3 Action Required

Number	Area	PCD
22/17-A-AR-1	The SMS Manual has different review before dates for different sections, e.g. pages 17 to 21 state a review before date of 01/04/2017 whereas preceding pages state 01/04/2018.	Next update of SMS Manual
22/17-A-AR-2	A role profile provided was not the latest revision and indicated the role was not safety critical, which is incorrect. It should be checked all role holders have the latest version of their role profile.	Within the next four months.
22/17-A-AR-3	BBRI should develop a procedure to formalise the role of the Safety Coach.	Within the next three months
22/17-A-AR-4	BBRI to make the key controls contained in a risk assessment visible to those undertaking the task to better improve engagement with the workforce.	Within the next four months

Table 2: Actions Required

5.4 Scope for Improvement

Number	Area
22/17-A-SFI-1	The next due review date is stated in the SMS Manual; this is a useful as a reminder and for planning purposes. However, should a review be completed and no updates made (hence no new revision being required) it is not clear how this would be identified. BBRI may wish to consider how this situation could be catered for within the SMS document (e.g. the document footer could be amended to include "Last review dd/mm/yyyy" in addition to the existing "Review before dd/mm/yyyy").
22/17-A-SFI-2	BBRI tasks could be subject to a "brainstorm" or cold eyes review on a regular basis to identify possible new/ changed / or previously unidentified hazards and causes associated with an activity/ task. Where applicable new or additional control and interventions may be identified.
22/17-A-SFI-3	It has been noted that actions raised at ESG Meetings often do not include a statement how the success or otherwise of that action is to be assessed. Inclusion of a measurable success statement may aid future action close-out efforts.

Table 3: Scope for Improvement Items

5.5 Good Practice

Number	Area
22/17-A-GP-1	Requiring individuals to sign for and demonstrate understanding and acceptance of their responsibilities is considered an efficient means of demonstrating compliance.
22/17-A-GP-2	The strong safety culture that appeared evident at all levels within the organisation gives confidence that personnel would not knowingly produce bad work, and that in the event of lapses occurring these would be addressed once they were identified.
22/17-A-GP-3	It is clear that BBRI actively seek information on issues that may be a safety concern, and that these receive appropriate attention at all levels within the management structure.
22/17-A-GP-4	A good level of monitoring of safety performance was evident, including proactive and collaborative approaches working with external parties.
22/17-A-GP-5	Resourcing appears to be under control, and potential future resourcing challenges identified and recorded. Management support of operational resourcing decisions, despite these potentially being unpopular was demonstrated.
22/17-A-GP-6	Safety (and business) goals are set annually and reviewed on a recurring basis at scheduled stages by a suitably qualified management team. The workforce are engaged in these through the annual Safe Start event.
22/17-A-GP-7	There is a clear desire within BBRI to encourage and involve all staff in the on-going development of safety performance, and a positive safety culture that encourages that.

Number	Area
22/17-A-GP-8	Including audits to address specific business needs and perceptions shows good safety leadership.

Table 4: Good Practice Areas

5.6 Audit Trail

None raised.

Appendix A FINAL AUDIT SCHEDULE

Running Order for CRR Audit May/June 2017					
Date	**Location**	**Time**	**Auditor**	**Auditee**	
29.05.17	Northern Cross	13.30-15.00	CRR	SHEQ Manager	
	Northern Cross	15.00-16:30	CRR	HOOPI	
30.05.17	Northern Cross	10.00-11.30	CRR	Operations Manager	
	Kildare	11.00-12.00	CRR	OTM Driver Operator	
	Northern Cross	15.00-16.30	CRR	Commercial Manager	
31.5.17	Kildare	09.00-10.30	CRR	Maintenance and Reliability Manager	
	Kildare	11.00-12.00	CRR	IÉ-IM OTM Planner	
	Kildare	12.00-13.30	CRR	Mobile Controller	
	Kildare	15.00-16.30	CRR	Safety Coach	
01.06.17	Inchicore	10.00-11.30	CRR	IÉ-IM IM Procedure Manager	
	Inchicore	11.30-12.30	CRR	IÉ-IM IM Investigation Manager	
02.06.17	Heathrow, UK	13.00-14.00	CRR	PHOO	
12.06.17	Hither Green, UK	13.30-15.00	CRR	PHOE	
12.06.17	Redbridge, UK	15.30-17.00	CRR	DRRA	

Table 5: Audit Interview Schedule

Appendix B EVIDENCE REFERENCES LIST

Through the course of this audit several individuals had a semi-structured interview. Each one of these has been assigned a unique number. For example, the BBRI SHEQ Manager might be number 9. Thus, evidence supplied by them would be numbered B.09.01, B.09.02 etc. with each individual piece of evidence having its own unique number.

The following is a list of all items of evidence supplied to the CRR auditors during the course of this audit.

B.00.00 SMR & HRO Audit Schedule

B.01.01 BBRI 2017 Audit Programme dated 21st November 2017

B.01.02 BBRI 2017 Inspection Programme REG-BBRI-1013 version 2

B.01.03 Professional Driving Handbook H-BBRI-10127 dated 15th April 2016

B.01.04 Refusing to Work on the Grounds of Health and Safety HSF-PR-0004 dated 4th July 2016

B.01.05 Validation of Change Procedure I-BBRI-0005 dated 19th February 2014

B.01.06 Incident Fast Facts "Points Run Through at Lavistown Co. Kilkenny" ISMS reference 541791

B.01.07 Incident Investigation Report Form "Points Run Through at Lavistown Co. Kilkenny" ISMS reference 541791

B.01.08 Incident Lessons Learnt "Points Run Through at Lavistown Co. Kilkenny"

B.01.09 BBRI ESG May 2017 meeting pack

B.01.10 Make Safety Personal Programme

B.01.11 Corrective Action P-BBRI-0002 dated 19th February 2014

B.01.12 Audit Management P-BBRI-0004 dated 17th November 2016

B.01.13 Interface Management P-BBRI-1000 dated 1st March 2017

B.01.14 Safety Monitoring Procedure P-BBRI-1002 dated 28th September 2016

B.01.15 Defect and Concession Management including the Management of Outstanding Defects Procedure P-BBRI-10138 dated 9th May 2016

B.01.16 BBRI Strategic Methodology P-BBRI-10139 dated 25th January 2017

B.01.17 Risk assessment RA04-Shunting On Track Machines R-BBRI-0027b dated 21st March 2017

B.01.18 e-mail dated 31st May 2017 "SAF 23 Unit 3"

B.02.19 Irish Rail (BBRI) Dashboard for May 2017 dated 6th June 2017

B.02.20 2017 ESG Safety Tours

B.02.21 Fault Report 781 dated 14th June 2016 Shift Id:11608

B.02.22 Infrastructure Operational Risk and Interface Group Meeting 23rd May 2017 Agenda

B.02.23 Risk Assessment Procedure P-BBRI-0027 dated 4th May 2017

B.02.24 On Call Procedure P-BBRI-1001 dated 20th December 2016

B.02.25 BBRI Health and Safety Policy P-BBRI-1034 dated May 2017

B.02.26 Safety Management System Manual P-BBRI-SMS-1031 dated 19th January 2017

B.02.27 Risk register type 1v8 R-BBRI-0027c

B.03.28 Ballast Cleaning Staff roster shift 5 revision 1

B.03.29 Ballast Cleaning Planned Shift Timeline 05/05/17 to 07/05/17

B.03.30 Assessments Due June 2017

B.03.31 Work Practise Amendment Briefing Document - Limerick Junction Division Briefing Document

B.03.32 Track Patrolling Feature Form Mainline Portlaoise to Thurles 59 ¾ -65 ½ mp reference D14.2

B.03.33 Ballast Cleaning Method Statement - Ballast Cleaning Up Road 59 ½ MP to 58MP Dublin-Cork dated 3rd May 2017

B.04.34 Management Operations Shift Report Checklist CL-BBRI-1011 dated 20th May 2017

B.04.35 RM90-Shfit Log F-BBRI-10120 Saturday 20th May 2017 – Day shift

B.05.36 Role Profile Maintenance and Reliability Manger dated 25th September 2015

B.05.37 Risk assessment RA27 – Maintenance R-BBRI-0027b dated 25th April 2017

B.05.38 Safety Coach Meeting Minutes dated 27th April 2017

B.06.39 Report into SPAD at RC874 in Charleville 12th August 2013 R0201-2-14-12, Issue 1 dated 21st February 2014

B.06.40 Report of Investigation: Points run-through at Lavistown West during TIII possession works 3rd April 2016 R0903-2016-29 dated 8th September 2016

B.06.41 Report of Investigation: Points run-through at DA218B with a OTM at Drogheda 14th May 2014 R0807-2015-31 dated 6th August 2016

B.06.42 5 Day Incident Review. Signal passed at danger without authority on 20th August 2014 at Bray Station. R0601-2015-18 dated 2nd May 2015

B.06.43 Infrastructure Manager Incident Review. Damage to rails at 10 miles 900 yards to Belfast line on 5th December 2014 R0204-2015-04 dated 11th February 2015

B.07.44 Service Quality Inspection Performance Report P-BBRI-10104-B dated 16th May 2017

B.07.45 Service Quality Inspection Performance Report P-BBRI-10104-B dated 14th March 2017

B.07.46 Balfour Beatty Rail Ireland Audit Report BBRI Audit of Maintenance BBRI/14/A03 dated August 2016

B.07.47 Executive Safety Group Minutes of Meeting 31st January 2017

B.07.48 Maintenance Policy for Rail Vehicles 196/PLT/5383/01 dated 31st August 2016

B.07.49 Safety Performance Monitoring and Defect Reporting IMP/RP/SAF/03 dated 13th May 2016

B.08.50 Minutes of Meeting – Risk Register Review dated 28th February 2017

B.08.51 Actions list form Rail Systems Senior Leadership Team Meeting dated 22nd March 2017

B.08.52 Rail Quality Dashboard dated April 2017

B.08.53 Balfour Beatty Gated Business Lifecycle End User Guide version 2.3a dated May 2016

B.08.54 Overall League Tables (Safety) undated

B.09.55 ESG Minutes January 2017

B.05.56 PDR Plan for Dublin 2017

AN COIMISIÚN UM RIALÁIL IARNRÓID
COMMISSION FOR RAILWAY REGULATION

Supervision Activity No. 32/17-A

An Audit of - *Iarnród Éireann Infrastructure Manager Chief Civil Engineers - Risk Control Measures Related to the Supply of Safety Critical Components*

Audit Conducted August/September 2017

Revision History:

Issue Revision: First Issue		
Prepared By	Michael Neale	11th of December 2017
Reviewed By	Anthony Byrne	11th of December 2017
Authorised by	Anthony Byrne	11th of December 2017

Preface

Purpose

The purpose of this report is to document the audit process and findings for the audit of Iarnród Éireann (IÉ) Chief Civil Engineer (CCE) insofar as it pertains to risk control measures related to the supply of safety critical components. In particular how criteria A and C of annex II of Commission Regulation (EU) No 1169/2010 is implemented and controlled.

Scope

This document applies the requirements of RSC-G-023-C section 4.2, CRR's methodology for undertaking auditing.

Responsibility

The author is responsible for drafting this document.

Executive Summary

The Commission for Railway Regulation (CRR) is the National Safety Authority (in respect of railways) in the Republic of Ireland. In accordance with Directive 2004/49/EC of the European parliament, the CRR is required to supervise Railway Undertakings' and Infrastructure Managers' continued application of their safety management systems once they have been granted certificates and authorisations, respectively. Iarnród Éireann Infrastructure Manager (IÉ-IM), having received safety authorisation as an Infrastructure Manager, is thus subject to the CRR supervision.

Under this requirement CRR has conducted an audit of the Chief Civil Engineers (CCE) Department, specifically addressing the topic of "Risk control measures related to the Supply of Safety Critical Components". This is cross referenced against Commission Regulation 1169/2010, Annex II, Criterion A and C.

The primary objectives of the audit were to identify compliance with the SMS, the effectiveness, suitability, and sufficiency of the SMS and areas for potential improvement including advising on good practice.

The overall impression from the audit was of an organisation that had a strong commitment to safety at all levels, and a system of controls that was well understood and implemented. Good practice was noted in several areas:

Number	Area
32/17-A-GP 1	32/17-A-GP 1 – Staff knowledge of procurement and procurement related processes. While conducting interviews knowledge of procurement and procurement related processes was consistently demonstrated. Clear explanations were provided not only of interviewees own role in the process but a good understanding was demonstrated of the process overall and the roles involved.
32/17-A-GP 2	Demonstration of positive leadership. This was particularly evident when staff described management meetings including Monday meetings with procurement and technical meetings. The output of this leadership also appears to be evident from staff knowledge and consistency, see 32/17-A-GP 1

Table 1: Good Practice

Two minor Non Compliances were identified. It is noted that these outcomes were mostly related to the documentation of procedures and not the implementation of processes which typically, from the samples taken, were found to be consistent and effective:

Number	Area
32/17-A-miNC 1	Non Compliance to Commission Regulation 1169/2010, Annex II, C1. There should be procedures within the SMS to verify the competence of contractors (including subcontractors) and suppliers. CCE-SMS-009 goes some way in achieving this, however, it does not provide sufficient detail of the processes being implemented. In this regard the procedure should at a minimum outline the steps involved and the responsible persons and interface. Also consider 32/17-A-miNC 2 and 32/17-A-AR 3
32/17-A-miNC 2	Non Compliance to Commission Regulation 1169/2010, Annex II, C1 in the case of procurement derogations. No procedure was available that captures the requirements of CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 with regard to quality management, production management and technical control checks of suppliers in the case of a procurement derogation. Also consider 32/17-A-miNC 1 and 32/17-A-AR 3

Table 2: Minor Non Compliance Items

Four Action Required outcomes were identified as shown below:

Number	Area	PCD
32/17-A-AR 1	IÉ-IM should review, clarify and document within the SMS the interface between the IM and the 'Procurement Department'. This review should at a minimum consider: • Interface arrangements and communication channels • Management of change to procurement documents and processes which may affect the IM	6 Months
32/17-A-AR 2	Implementation of Sections 4.5.1 and 4.5.2 of CCE-SMS-009. No evidence was available to demonstrate that sections 4.5.1 and 4.5.2 of CCE-SMS-009 v5 [B.00.08] were being implemented. IÉ-IM (CCE) should review these requirements to determine their basis and take suitable actions to address this outcome.	6 Months

Number	Area	PCD
32/17-A-AR 3	Procurement Processes for purchasing below €50,000. The process used for the assessment of suppliers against the quality management, production management and technical control requirements in line with CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 may benefit from formalisation. Specifically IÉ-IM (CCE) should review the need for documented procedures including templates used and records kept. Also consider 32/17-A-miNC 1 and 32/17-A-miNC 2	6 Months
32/17-A-AR 4	IÉ-IM (CCE) should review the position of Senior Engineer Production Planning and determine the need for a nominated deputy. Given the key procurement processes undertaken and key records held by the Senior Engineer Production Planning, IÉ-IM (CCE) should determine the need for a nominated deputy.	6 Months

Table 3: Action Required Items

Two Scope for improvement outcomes were identified as shown below:

Number	Area
32/17-A-SFI 1	Clause 1.3.3 of CCE-SMS-009. It may be beneficial to test clause 1.3.3 of CCE-SMS-009 to determine if suppliers can comply with such a request and to see if maintenance of the requisite requirements of the standard are ensured by the supplier throughout the life of a contract, particularly in the case where quality issues are identified.
32/17-A-SFI 2	Component specifications including drawings and technical requirements. IÉ-IM (CCE) might clarify in the SMS who holds specifications including drawings and technical requirements and where they are retained.

Table 4: Scope for Improvement Items

No Audit Trails were identified.

Table of Contents

Glossary of Terms

Term	Meaning / Definition
AR	Action Required
AT	Audit Trail
CIÉ	Córas Iompair Éireann
CRR	Commission for Railway Regulation (the NSA for Ireland)
CSM	Common Safety Method
GP	Good Practice
IÉ	Iarnród Éireann (railway subsidiary of CIÉ)
IM	Infrastructure Manager
MaNC	Major Non Compliance
miNC	Minor Non Compliance
NC	Non Compliance
NSA	National Safety Authority
PCD	Planned Completion Date
SFI	Scope for Improvement
SMART	Specific, Measurable, Achievable, Realistic and Timely
SMS	Safety Management System

1 Introduction

Directive 2004/49/EC of the European parliament and of the council, otherwise known as the Railway Safety Directive, under Article 9 requires that every Infrastructure Manager (IM) and Railway Undertaking (RU) has a documented Safety Management System (SMS). This applies to Iarnród Éireann (IÉ) as an Infrastructure Manager. This legal requirement is re-enforced by national legislation (S.I. No.444 of 2013) and applies in all respects to Iarnród Éireann.

1.1 Audit Scope

The functional scope of the audit is the risk control measures related to the supply of safety critical components within the safety management of Iarnród Éireann (IÉ) – Infrastructure Manager (IÉ-IM) and specifically within the Chief Civil Engineer (CCE) department of IÉ-IM.

The applicable CSM (1169/2010) Annex II criteria relevant to this audit are, criterion A and criterion C (see section 1.3 for further details).

1.2 Audit Objectives

The objectives of the audit were to:

- identify:
  - the organisations compliance with its own Safety Management System,
  - the effectiveness, suitability, and sufficiency of the SMS to demonstrate compliance with the applicable Common Safety Methods,
  - areas for potential improvement to the management systems including advising on good practice,
- agree findings and remedial action with IÉ-IM (CCE).

1.3 Audit Criteria

The Commission for Railway Regulation (CRR) has completed an audit of the Chief Civil Engineer's (CCE) safety management system (SMS) with particular attention given to:

- Commission Regulation 1169/2010, Annex II, criterion A. Risk control measures for all risks associated with the activity of the Infrastructure Manager:
  - A.1. There are procedures in place to identify risks associated with railway operations, including those directly arising from work activities, job design or workload and the activities of other organisations/persons.
  - A.2. There are procedures in place to develop and put in place risk control measures
  - A.3. There are procedures in place to monitor the effectiveness of risk control arrangements and to implement changes when required.

- A.4. There are procedures in place to recognise the need to work together with other entities (such as railway undertakings, manufacturer, maintenance supplier, entity in charge of maintenance, railway vehicle keeper, service provider and procurement entity), where appropriate, on issues where they have shared interfaces that are likely to affect the putting in place of adequate risk control measures in accordance with Article 4(3) of Directive 2004/49/EC.
- A.5. There are procedures for agreed documentation and communication with the relevant entities, including the identification of roles and responsibilities of each participating organisation and the specifications for information exchanges.
- A.6. There are procedures to monitor the effectiveness of these arrangements and to implement changes when required.

- Commission Regulation 1169/2010, Annex II, C. Risk control related to the use of contractors and control of suppliers:
  - C.1. There are procedures to verify the competence of contractors (including subcontractors) and suppliers.
  - C.2. There are procedures to verify and control the safety performance and results of all contracted services and products supplied either by the contractor or supplier to ensure that they comply with the requirements set out in the contract.
  - C.3. Responsibilities and tasks relating to railway safety issues are clearly defined, known and allocated between the contracting partners and among all other interested parties.
  - C.4. There are procedures to ensure traceability of safety-related documents and contracts.
  - C.5. There are procedures to ensure that safety tasks, including the exchange of safety-related information, are performed by the contractors or the supplier according to relevant requirements set out in the contract.

Other related areas considered included:

- Commission Regulation 1169/2010, Annex II, C. Risk control related to the supply of maintenance and material:
  - B.1. There are procedures to derive maintenance requirements/standards/processes from safety data.
  - B.2. There are procedures to adapt maintenance intervals according to the type and extent of service performed.
  - B.3. There are procedures to ensure that the responsibility for maintenance is clearly defined to identify the competencies required for maintenance posts and to allocate appropriate levels of responsibility.
  - B.4. There are procedures to collect information on malfunctions and defects arising from day-to-day operation and to report them to those responsible for maintenance.

- B.5. There are procedures to identify and report risks arising from defects and construction non-conformities or malfunctions throughout the lifecycle to interested parties.
- B.6. There are procedures to verify and control the performance and results of maintenance to ensure that they comply with corporate standards.

2 Methodology

2.1 The Audit Process

The audit methodology is defined in RSC-G-023 C which is available on the CRR website; www.crr.ie

For convenience a summery description of the audit methodology is described below:

1 An opening meeting prior to the audit to set the terms of the audit, to request documentation and to discuss and agree audit timings.

2 Review (prior to the audit) the IÉ-IM CCE management system documentation received leading to the generation of a set of questions addressing the audit scope.

3 Interviews with Iarnród Éireann – Procurement personnel, together with IÉ-IM and CCE staff identified by the CRR as relevant to the audit, or staff identified in the management system. The audit schedule including names and titles of interviewees and the locations of the interviews is given in Appendix A.

4 A review of documentation (evidence) witnessed and/or collected by the auditors. The list of evidence is recorded in Appendix B and, where specific observations refer to evidence, the numbered evidence item is included at the end of the subsection within which the observation appears.

2.2 Audit Outcomes

Contained within the main body of the report, non-compliances (NC) and areas where some definite Action is Required (AR) are identified. In addition, areas where there is 'scope for improvement' are highlighted. Where possible, actions are made Specific, Measurable, Achievable, Realistic and Timely (SMART). Where particular Good Practice (GP) is noticed, or further consideration of the topic is identified as an Audit Trail (AT), these are also recorded. The audit outcomes are classified as follows:

Major Non Compliance (MaNC): an area of non-compliance with an IÉ internal standard, an applicable external standard, or legislation that is evidence of a system failure.

Minor Non Compliance (miNC): an area of non-compliance with IÉ internal standards, an applicable external standard, or legislation that is evidence of a sporadic lapse in implementation of a system or deviation from a system.

Action Required (AR): an area where potential exists for a non-compliance to occur unless remedial action is taken or improvement is made, an isolated error that requires correction, or some other issue where, in the opinion of the auditor action is necessary.

Scope for improvement (SFI): an area highlighted where, in the opinion of the Auditor, system or business improvement can be achieved by the company. Typically this is phrased

as a recommendation, the merits and implementation of which should be decided by the audited organisation.

Good Practice (GP): an area highlighted which, in the opinion of the Auditor, is good practice within the industry.

Audit Trail (AT): an area that the auditor believes should have further attention, either by inclusion in the programme for future audits (but not necessarily an external audit item) or by some other means.

The format in which an audit outcome is given is shown below.

32/17-A-AR 1 - Title (High level descriptor of identified issue)
Detail as required
PCD: (Planned completion date only specified for 'Action Required')

Figure 1: Audit Outcome Format

2.3 Evidence references

As is common practice when auditing, auditors are expected to seek evidence whenever possible to verify statements made by interviewees, to confirm that an activity has taken place or to demonstrate a procedure/standard exists.

Contained within the report, and specifically in Section 4, references are made to items of documentary evidence received through the course of this audit. Such references are shown in square brackets with the letter 'B' prefix, followed by a number e.g., [B.02.08]. Every interviewee has been assigned a unique number, starting from 1. For example the CME might be number 3. Thus documentary evidence supplied by the Chief Mechanical Engineer would be numbered B.03.01, B.03.02 etc. with each individual piece of evidence having its own unique number.

This methodology aids traceability and enables the CRR to clearly link audit outcomes to items of evidence.

3 Organisational Structure

The Organisational Chart and the position of the CCE within it is shown in IM-SMS-001. The Organisation of the CCE is shown in CCE-SMS-001. Extracts from IM-SMS-001 and CCE-SMS-001 showing the organisational charts of the IM and CCE respectively are shown in the figures below.

IM-SMS-001 – Infrastructure Manager Safety Management System

3.7 **IM Executive Management Team**

3.7.1 The Executive Management team of the Infrastructure Manager is as under:

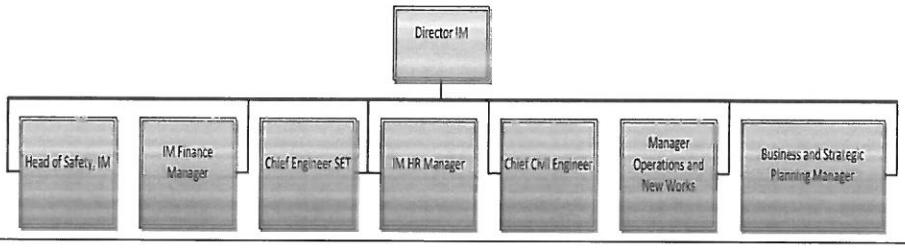

Figure 2: IÉ-IM SMS Organisational Diagram extracted from IM-SMS-001 Version 4.0

5.5 **CCE Organisation**

5.5.1 The high level organisation of the CCE Department is as follows.

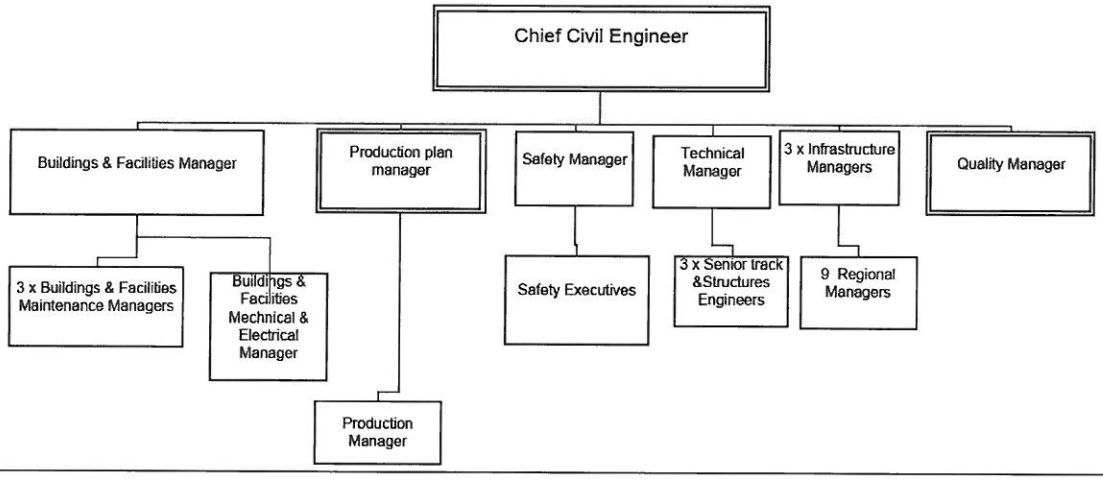

Figure 3: IÉ-IM CCE SMS Organisational Diagram extracted from CCE-SMS-001 Version 5.1

4 Audit Findings & Recommendations

4.1 Commission Regulation 1169/2010, Annex II, C. Risk control related to the use of contractors and control of suppliers:

4.1.1 C.1. There are procedures to verify the competence of contractors (including subcontractors) and suppliers.

According to CCE-SMS-009 [B.00.08] section 4.3:

> *"the Chief Procurement Officer via the application of the requirements of the appropriate procurement process records the supplier as qualified based on an assessment by the appropriate evaluation panel of the manufacturing, quality and management control processes of the supplier as sufficient to ensure that the equipment will be consistently supplied to the appropriate quality to ensure the provision of Safe equipment."*

Further to this CCE-SMS-009 [B.00.08] 4.3.1, 4.3.2 and 4.3.3 expand on quality management, production management and technical control as follows:

> *"Quality management, including demonstrable processes to minimise, control and mitigate defects in manufacturing, management of the quality of sub-components and sub-suppliers",*
>
> *"Production management, including demonstrable process control systems and techniques to ensure quality control throughout the production process including the supply of sub-components and/or sub-suppliers",*
>
> *"Technical control, including document control, control of specifications, control of subcomponent and/or sub-supplier specifications, etc.".*

In this regard for procurement of safety critical components and materials above €50,000 the process was managed by the centralised procurement department. It was explained that during the pre-qualification phase pre-qualification questionnaires are received by procurement from applicants and provided to the evaluation panel. It was explained that the evaluation panel is made up of one procurement representative and usually 2 production and/or technical persons. The evaluation panel then assess the pre-qualification questionnaires and identify any applications that do not meet the minimum requirements including quality management, production management and technical control requirements in line with CCE-SMS-009 [B.00.08] 4.3.1, 4.3.2 and 4.3.3. Those applicants which do meet the requirements are then invited to tender. It was apparent from all observed samples that quality management, production management and technical control as described above were set as a minimum requirement for assessment by the evaluation panel during pre-qualification phase. This was consistent with the process provided during the audit as described in 'CIE Group Procurement Policies and Procedures' [B.04.04]. While sampling it was evident that if these minimum requirements were not met by an applicant that they were not invited to tender.

In the case of procurement of safety critical components below €50,000 the process was perceived as being carried out by the CCE Production team with oversight and approval by the Procurement department with a similar approach taken whereby the quality management, production management and technical control was assessed as a minimum

requirement. This process appeared to be by way of a request for quotation rather than a public advertisement.

It is noted that the procurement process was contained in 'CIE Group Procurement Policies and Procedures' [B.04.04] which appeared to be outside the IM's SMS. The IM's procurement requirements, however, were contained in the SMS in CCE-SMS-009 [B.00.08]. This arrangement appeared to work in practice, however, it is not made explicitly clear in the IM SMS if Procurement is part of the IM or if it is a provider of services (a contractor) to the IM.

Post audit note:

After distributing a draft for comment audit report, in line with CRR-G-023, a comment was received in relation to section 4.4.1 and outcome 32/17-A-miNC 1. The comment reiterated the processes in place in the IM to verify the competence of contractors and suppliers. A meeting was held between the CRR auditors and the auditee to discuss this comment. During the discussion the auditors explained that although the observed processes within the organisation appeared to comply with the requirements, and all samples taken during the audit supported this, the procedures in the SMS as audited did not fully reflect these processes and did not contain sufficient detail. This lack of detail may be further explained with the following non exhaustive points:

CCE-SMS-009 provides a commitment with regard to what will be checked at a high level. However, it is unclear who the procurement evaluation panel are or how they assess the supplier's organisation, performance and processes. CCE-SMS-009 does not provide any information on what competences are required in the procurement evaluation panel, who is eligible to be on the panel or what departments must be represented if any. CCE-SMS-009 does not provide any requirements on how suppliers must be assessed nor does it provide any options. As such it is unclear what methodology is used whether this is an ISO17021 second party certification, an ISO19011 audit, another type of onsite inspection, a paperwork assessment or a quick internet such of publicly available information. From the position of someone unfamiliar with the existing process it is difficult to determine how it works in practice and from the perspective of an external auditor the process is not measureable. The report has been updated to include the above elaboration.

32/17-A-miNC 1 – Non Compliance to Commission Regulation 1169/2010, Annex II, C1.

There should be procedures within the SMS to verify the competence of contractors (including subcontractors) and suppliers. CCE-SMS-009 goes some way in achieving this, however, it does not provide sufficient detail of the processes being implemented. In this regard the procedure should at a minimum outline the steps involved and the responsible persons and interface.

Also consider 32/17-A-miNC 2 and 32/17-A-AR 3

Post audit note:

After distributing the draft for comment report in line with CRR-G-023 a comment was received in relation to section 4.4.1 and outcome 32/17-A-AR 1. The comment explained that *"the interface between the IM and the Procurement Department was*

extensively considered during the application for safety validation of the IM, RU and Central Procurement organisational changes that was undertaken in accordance with IM-SMS-013 Version 1 and RU-SMS-013 Version 3". A meeting was held between the CRR auditors and the auditee to discuss this comment. During the discussion the auditors explained that audit samples indicated that effective interfaces were in place including a number of formal meetings, however, the procedures in the SMS as audited did not fully reflect this. The auditee agreed that this clarified the issue and associated comment.

32/17-A-AR 1 - IÉ-IM should review, clarify and document within the SMS the interface between the IM and the 'Procurement Department'.

This review should at a minimum consider:

- Interface arrangements and communication channels
- Management of change to procurement documents and processes which may affect the IM

PCD: 6 Months

It was explained during the audit that there are a number of situations which may result in a derogation to the procurement procedure being sought. According to the 'CIE Group Procurement Policies and Procedures' [B.04.04] section 7:

"Derogations may be sought by a Function Manager in the situations described below:

1. Where no tenders or no suitable tenders or no requests to participate or no suitable requests to participate have been submitted in response to a procedure with a prior call for competition, provided that the initial conditions of the contract are not substantially altered. A tender shall be considered not to be suitable where it is irrelevant to the contract, being manifestly incapable, without substantial changes, of meeting the contracting entity's needs and requirements as specified in the procurement documents.

2. Where a contract is purely for the purpose of research, experiment, study or development, and not for the purpose of securing a profit or of recovering research and development costs, and insofar as the award of such contract does not prejudice the competitive award of subsequent contracts which do seek, in particular, those ends;

3. Where the works, supplies or services can be supplied only by a particular economic operator for any of the following reasons:

(i) the aim of the procurement is the creation or acquisition of a unique work of art or artistic performance;
(ii) competition is absent for technical reasons;
(iii) the protection of exclusive rights, including intellectual property rights.
The exceptions set out in points (ii) and (iii) shall only apply when no reasonable alternative or substitute exists and the absence of competition is not the result of an artificial narrowing down of the parameters of the procurement;

4. In so far as is strictly necessary where, for reasons of extreme urgency brought about by events unforeseeable by the contracting entity, the time limits laid down for open procedures, restricted procedures and negotiated procedures with prior call for

competition cannot be complied with. The circumstances invoked to justify extreme urgency shall not in any event be attributable to the contracting entity;

5. In the case of supply contracts for additional deliveries by the original supplier which are intended either as a partial replacement of supplies or installations or as the extension of existing supplies or installations, where a change of supplier would oblige the contracting entity to acquire supplies having different technical characteristics which would result in incompatibility or disproportionate technical difficulties in operation and maintenance;

6. For new works or services consisting in the repetition of similar works or services assigned to the contractor to which the same contracting entities awarded an earlier contract, provided that such works or services conform to a basic project for which a first contract was awarded. The basic project shall indicate the extent of possible additional works or services and the conditions under which they will be awarded. As soon as the first project is put up for tender, the possible use of this procedure shall be disclosed and the total estimated cost of subsequent works or services shall be taken into consideration by the contracting entities;

7. For supplies quoted and purchased on a commodity market;

8. For bargain purchases, where it is possible to procure supplies by taking advantage of a particularly advantageous opportunity available for a very short time at a price considerably lower than normal market prices;

9. For purchases of supplies or services under particularly advantageous conditions from either a supplier which is definitively winding up its business activities or the liquidator in an insolvency procedure, an arrangement with creditors or a similar procedure under national laws or regulations;

10. Where the service contract concerned follows a design contest and is to be awarded, under the rules provided for in the design contest, to the winner or to one of the winners of that contest; in the latter case, all the winners shall be invited to participate in the negotiations."

In the case where a derogation applied there was no requirement to tender and as such the normal PPQ and tender process were not required. In this case it was unclear what process captured the requirements of CCE-SMS-009 [B.00.08] and specifically sections 4.3.1, 4.3.2 and 4.3.3 with regard to quality management, production management and technical control checks.

32/17-A-miNC 2 - Non Compliance to Commission Regulation 1169/2010, Annex II, C1 in the case of procurement derogations.

No procedure was available that captures the requirements of CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 with regard to quality management, production management and technical control checks of suppliers in the case of a procurement derogation.

Also consider 32/17-A-miNC 1 and 32/17-A-AR 3

4.1.2 C.2. There are procedures to verify and control the safety performance and results of all contracted services and products supplied either by the contractor or supplier to ensure that they comply with the requirements set out in the contract.

There were a number of points at which information on the performance and results of products supplied were checked. These checks appeared in most cases to focus on the potential for impact on the safety and quality of the railway as a priority and on the supply of material as a consequence of this. Throughout the interviews a number of check points were described which included:

- Pre-delivery visual checks
- Post-delivery visual checks
- Testing (of samples)

It was explained that for the procurement of points & crossings (P&C) it was typical for a member of the Production team to perform a pre-delivery inspection. It is understood that this approach was chosen to some extent due to the cost of the material, cost of delivery and difficulty in reworking material after delivery. Samples of issues with P&C panels identified from these inspections were provided [B.08.06] and it was evident that identified issues were being suitably actioned.

It was also explained that rails were typically inspected at the point of delivery at the port. It is understood that this approach was chosen due to rail issues predominantly resulting from handling and transport. Issues with rails identified from these inspections were sampled [B.08.07] and it was evident that identified issues were being suitably actioned.

It was explained that ballast is randomly collected for subsequent testing and also collected upon suspicion of quality issues at delivery or at point of use. It was explained that the specification for ballast has been tightened in recent years and a higher level of control has been applied. It was explained that where suppliers of ballast had failed to meet the requirements with regard to ballast specification that suppliers had been notified and in some cases had their contract to supply suspended and/or blocked; corroborating documentation was observed during interviews.

Other examples of results of performance monitoring include issues with double coil spring washers and with the change in design of a buffer type supplied [B.08.05] [B.08.08].

It was explained that the Materials Department which are managed under the IM oversee and approve purchasing activities performed by production. It was explained that in most cases this is done directly by procurement but for smaller purchases it is done by materials.

In addition to the above checks it is also understood that the CCE division which receive the materials/components for use would perform visual inspection as a last line of defence and have on occasion identified issues which typically relate to transport damage and some in some cases of quality issues with ballast.

It was explained that feedback to the Procurement department is provided both directly on identification of issues and through management meetings including the monthly 'procurement meeting', 'monthly technical meeting' and the 'monthly joint technical meeting'. Where issues are identified this leads to suppliers being notified [B.08.05] [B.08.06] [B.08.07] [B.08.08] either directly by the Production team in collaboration with materials for purchases under €50,000 or by the Procurement department for purchases

over €50,000 which may lead to the contract being suspended and/or blocked. Again, corroborating documentation was sighted during interviews. It was also demonstrated that in some cases where suppliers continued to underperform that performance regimes [B.08.10] had been introduced which applied financial penalties for under performance. In the case where performance regimes were introduced, it was observed that these applied primarily in the case of delivery issues such as late delivery or missing components rather than safety issues. Safety issues appeared to be dealt with more seriously as described above with contract suspension or contract blocking.

4.1.3 C.3. Responsibilities and tasks relating to railway safety issues are clearly defined, known and allocated between the contracting partners and among all other interested parties.

It appeared in most cases that although the IM assessed supplying organisations quality management, production management and technical control (see section 4.2.1) a diligent level of additional checks were applied to components and materials supplied (see section 4.2.2). In this regard it appeared that supplier responsibility was primarily contractual and that the IM maintained safety responsibility. Notwithstanding this, typical supplier responsibilities were demonstrated including templates and sample contracts [B.04.03] [B.05.04].

Typical supplier responsibilities extracted from the 'Standard Contract for the Purchase of Goods' section A7 states the following [B.04.03] [B.05.04]:

- *(Section A7 (1) (e)) it will comply with the applicable SMS-009 (applicable IE Standard for Approved Suppliers of Safety Critical Equipment) where this Standard is made applicable under Schedule I;*
- *(Section A7 (1) (f)) it will maintain its status as an "Approved Supplier of Safety Critical Equipment" within the meaning of the applicable IE Standard SMS-009, where this Standard is made applicable under Schedule I, and will do so for the duration of the Term and any contract extension that may be granted by IE under Schedule B;*
- *(Section A7 (1) (j)) all information and documentation it has supplied to IE or CIE in connection with this Contract, or the tender process for the award of this Contract, was true, complete and accurate in all material respects at the date it was provided*
- *(Section A7 (2)) The Supplier covenants and undertakes with each of IE and CIE that:*
    - *a) it will notify IE in writing by Notice of any material change to its status regarding any of the warranties and representations, covenants and undertakings set out in this Clause A7, and will comply with all reasonable directions of IE, which may include termination of this Contract;*
    - *b) it will maintain in full force all necessary consents, permits, authorisations and licences required by it to perform its obligations under the Contract;*
    - *c) it will act in a thoroughly competent and efficient manner, with all due speed and diligence, in the best interests of IE and CIE in supplying the Goods to IE and will exercise independent professional skill and judgment when doing so;*

d) it will supply the Goods in accordance with the terms and conditions of this Contract;

It was explained that only one example from the recent past was available of a supplier notifying of an issue with a supplied material and that in this case IÉ-IM had not received any of the defective material. However, this was seen as demonstrating that suppliers were complying with these requirements. Many more cases were available whereby IÉ-IM had inspected the supplied items and identified a change, this is further discussed in section 4.4.2.

It is notable that no examples of the use of CCE-SMS-009 [B.00.08] clause 1.3.3 were available (specifically records of IÉ-IM requesting a supplier to demonstrate maintenance of the requirements of CCE-SMS-009). CCE-SMS-009 [B.00.08] clause 1.3.3 states:

> *"1.3.3. Maintenance of the requisite requirements as noted in this standard shall be ensured by the supplier in accordance with this standard and demonstrated to Iarnród Éireann on request."*

32/17-A-SFI 1 - Clause 1.3.3 of CCE-SMS-009.

It may be beneficial to test clause 1.3.3 of CCE-SMS-009 to determine if suppliers can comply with such a request and to see if maintenance of the requisite requirements of the standard are ensured by the supplier throughout the life of a contract, particularly in the case where quality issues are identified.

Sections 4.5.1 and 4.5.2 of CCE-SMS-009 [B.00.08] state:

> 4.5.1 *"Non OEM Supplier: The Chief Procurement Officer will write to the suppliers of safety critical components (other than OEM suppliers) annually and remind them of their responsibility to notify the contracted Iarnród Éireann point of contact of any changes to the component or the supply chain which result in a material difference to the basis on which the Technical and /or supplier certification was granted."*
>
> 4.5.2 *"OEM Supplier: The Chief Procurement Officer will write to the OEM suppliers of safety critical components every two years and remind them of their responsibility to notify the contracted Iarnród Éireann point of contact of any changes to the component or the supply chain which result in a material difference to the basis on which the Technical and /or supplier certification was granted."*

No evidence was available to demonstrate that sections 4.5.1 and 4.5.2 of CCE-SMS-009 [B.00.08] were being implemented. It is noted that the current version of CCE-SMS-009 (v5) only became live on the 1st of April 2017. Sections 4.5.1 and 4.5.2 state that letters should be sent annually and every two years respectively. Since circa 5 months had passed since the requirement became live it would be expected that the first letter would already have been sent to suppliers that had an existing contract in place for one or two years respectively.

32/17-A-AR 2 - Implementation of Sections 4.5.1 and 4.5.2 of CCE-SMS-009.

No evidence was available to demonstrate that sections 4.5.1 and 4.5.2 of CCE-SMS-009 v5 [B.00.08] were being implemented. IÉ-IM (CCE) should review these requirements to determine their basis and take suitable actions to address this outcome.

PCD: 6 Months

4.1.4 C.4. There are procedures to ensure traceability of safety-related documents and contracts.

For purchasing above €50,000; it was explained that there are rigid procedures in place for the handling of pre-qualification and tender documentation by the Procurement department. It was explained that during the pre-qualification phase pre-qualification questionnaires are received by procurement from applicants and provided to the evaluation panel. The evaluation panel then assess the pre-qualification questionnaires and identify any applications that do not meet the minimum requirements including quality management, production management and technical control requirements in line with CCE-SMS-009 [B.00.08] 4.3.1, 4.3.2 and 4.3.3. Those applicants which meet the requirements are then invited to tender. It was explained that tenders are received, recorded and held in line with the 'CIE group Procurement policies and procedures' [B.04.04]. Section 6.5.6 sets out the requirements for receipt and opening of tender documents and section 9 sets out the requirements for records which includes 'records to be kept justifying all decisions taken in all stages of the procurement process' and 'all relevant tender files must be held safe and available for inspection or audit'. Additional specific detail is provided in section 9 including storage period requirements. During the audit the aforementioned records requested were available in all cases.

For purchasing below €50,000; it was explained that invitations to quote were sent to potential suppliers by the Production team with oversight and approval by the Procurement department with a similar approach taken whereby the quality management, production management and technical control were assessed as a minimum requirement. This process appeared to be typically by way of a request for quotation rather than a public advertisement. During the audit the aforementioned records requested were available in all cases, however, it was unclear how the records were being held and what company procedure was being used. It appeared that the Production Team had developed an excel sheet which was used to perform the checks and record the results and was held as a record by production.

32/17-A-AR 3 - Procurement Processes for purchasing below €50,000.

The process used for the assessment of suppliers against the quality management, production management and technical control requirements in line with CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 may benefit from formalisation. Specifically IÉ-IM (CCE) should review the need for documented procedures including templates used and records kept.

Also consider 32/17-A-miNC 1 and 32/17-A-miNC 2

PCD: 6 Months

32/17-A-AR 4 - IÉ-IM (CCE) should review the position of Senior Engineer Production Planning and determine the need for a nominated deputy.

Given the key procurement processes undertaken and key records held by the Senior Engineer Production Planning, IÉ-IM (CCE) should determine the need for a nominated deputy.

PCD: 6 Months

Contractual requirements were explained to be contained within the contract and samples were viewed [B.04.03] [B.05.04]. For all samples taken suitable document control appeared to be in place and it was understood that procurement held the contract.

It was explained that the CCE Technical Manager held the technical specifications, however, in some cases it was found that the Procurement department held the specification. That said, for all samples reviewed the technical specification and drawings were available.

32/17-A-SFI 2 - Component specifications including drawings and technical requirements.

IÉ-IM (CCE) might clarify in the SMS who holds specifications including drawings and technical requirements and where they are retained.

With regards to traceability of components and materials; it was explained that components and materials are assigned to work orders which are issued and recorded in SAP. This approach then facilitates the traceability of components and materials to their location of use or installation. Therefore, if an issue is identified with a batch of components or materials after installation it is possible to identify the location of use. Similarly, components or materials found on site could be linked to their delivery and batch by looking at the work orders for that location, although this does not include all historic work. Additionally, many components and materials have identification information on them, such as rails, sleepers, fishplates etc. It was also explained that materials in stores are recorded in SAP by location.

4.1.5 C.5. There are procedures to ensure that safety tasks, including the exchange of safety-related information, are performed by the contractors or the supplier according to relevant requirements set out in the contract.

See section 4.2.2.

4.2 Commission Regulation 1169/2010, Annex II, A. Risk control measures for all risks associated with the activity of the Infrastructure Manager:

4.2.1 A.1. There are procedures in place to identify risks associated with railway operations, including those directly arising from work activities, job design or workload and the activities of other organisations/persons.

While discussing the procurement of new components it was explained that IM-SMS-014 [B.00.05] is used for the control of changes and that this process is used to manage the associated risks. The procurement process CCE-SMS-009 [B.00.08] controls the procurement process and associated risks including ensuring that the component procured matches the specification and that the supplier can continue to meet this specification. CCE-SMS-009 [B.00.08] does not control the risks associated with setting the material specification, or changes to the material specification. Although there was some crossover in sampling, the process associated with IM-SMS-014 [B.00.05] 'Safety Approval of Changes in Plant, Equipment, Infrastructure and Operations (PEIO)' was considered to be largely outside the scope of the audit.

4.2.2 A.2. There are procedures in place to develop and put in place risk control measures

A sample was reviewed of a Safe Systems of Work SSOW for "Loading of 36 Meter Rails at Belview Port, Waterford" [B.02.01]. This SSOW clearly listed: the scope, required PPE,

required equipment, competence requirements, related documents including a risk assessment, and described the procedure including use of equipment.

A sample was reviewed of a SSOW for "Loading/Unloading Length of Rail at Portlaoise Rail & Sleeper Depot by A-Frame Gantry" [B.02.02]. This SSOW clearly listed: the scope, required PPE, required equipment, competence requirements, related documents including related SSOWs, and described the procedure including use of equipment.

4.2.3 A.3. There are procedures in place to monitor the effectiveness of risk control arrangements and to implement changes when required.

The IÉ-IM 2017 safety audit programme was reviewed. No audits specifically applicable to the scope of this CRR audit were identified, however, some of the planned audits may indirectly crossover with elements within the scope of this audit. It is noted that the audit programme did not link the scheduled audits to clause from the CSM for safety authorisation (Commission Regulation (EU) 1169/2010) but rather to SMS documents except in the case of one audit which referenced the CSM for Monitoring (Commission Regulation (EU) 1078/2012).

Quality Management and related audit/inspection activities were discussed. The quality audit schedule [B.03.05], and a number of quality audits/inspections were sampled [B.02.03] [B.03.06]. In addition the tracking and closure of quality audit/inspection outcomes was discussed and sampled [B.03.07]. In general while the quality management system was not found to directly relate to the scope of the audit the approach taken appeared to be good and the outputs from quality audits/inspections and the continuous improvement demonstrated is considered to contribute to the overall control of risk related to the Supply of Safety Critical Components.

4.2.4 A.4. There are procedures in place to recognise the need to work together with other entities (such as railway undertakings, manufacturer, maintenance supplier, entity in charge of maintenance, railway vehicle keeper, service provider and procurement entity), where appropriate, on issues where they have shared interfaces that are likely to affect the putting in place of adequate risk control measures in accordance with Article 4(3) of Directive 2004/49/EC.

See sections 4.1 and 4.2.1.

4.2.5 A.5. There are procedures for agreed documentation and communication with the relevant entities, including the identification of roles and responsibilities of each participating organisation and the specifications for information exchanges.

Those aspects of this criteria which were applicable are better covered in other sections of the report, see section 4.1.

4.2.6 A.6. There are procedures to monitor the effectiveness of these arrangements and to implement changes when required.

See section 4.2.3.

4.3 Commission Regulation 1169/2010, Annex II, C. Risk control related to the supply of maintenance and material:

4.3.1 B.1. There are procedures to derive maintenance requirements/standards/processes from safety data.

This section was not directly applicable to the audit, those aspects of this criteria which were applicable are better covered in other sections of the report. See other subsections of section 4.1 for more information.

4.3.2 B.2. There are procedures to adapt maintenance intervals according to the type and extent of service performed.

This section was not directly applicable to the audit.

4.3.3 B.3. There are procedures to ensure that the responsibility for maintenance is clearly defined to identify the competencies required for maintenance posts and to allocate appropriate levels of responsibility.

This section was not directly applicable to the audit.

4.3.4 B.4. There are procedures to collect information on malfunctions and defects arising from day-to-day operation and to report them to those responsible for maintenance.

Those aspects of this criteria which were applicable are better covered in other sections of the report, see section 4.1.2.

4.3.5 B.5. There are procedures to identify and report risks arising from defects and construction non-conformities or malfunctions throughout the lifecycle to interested parties.

Those aspects of this criteria which were applicable are better covered in other sections of the report, see section 4.1.2.

4.3.6 B.6. There are procedures to verify and control the performance and results of maintenance to ensure that they comply with corporate standards.

This section was not directly applicable to the audit, those aspects of this criteria which were applicable are better covered in other sections of the report. See other subsections of section 4.1 for more information.

5 Summary of Findings

5.1 Good Practice

32/17-A-GP 1 – Staff knowledge on procurement and procurement related processes.

While conducting interviews knowledge of procurement and procurement related processes was consistently demonstrated. Clear explanations were provided not only of interviewees own role in the process but a good understanding was demonstrated of the process overall and the roles involved.

32/17-A-GP 2 – Demonstration of positive leadership.

This was particularly evident when staff described management meetings including Monday meetings with procurement and technical meetings. The output of this leadership also appears to be evident from staff knowledge and consistency, see 32/17-A-GP 1

5.2 Minor Non Compliance

32/17-A-miNC 1 – Non Compliance to Commission Regulation 1169/2010, Annex II, C1.

There should be procedures within the SMS to verify the competence of contractors (including subcontractors) and suppliers. CCE-SMS-009 goes some way in achieving this, however, does not provide sufficient detail of the processes being implemented. In this regard the procedure should at a minimum outline the steps involved and the responsible persons and interface.

Also consider 32/17-A-miNC 2 and 32/17-A-AR 3

32/17-A-miNC 2 - Non Compliance to Commission Regulation 1169/2010, Annex II, C1 in the case of procurement derogations.

No procedure was available that captures the requirements of CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 with regard to quality management, production management and technical control checks of suppliers in the case of a procurement derogation.

Also consider 32/17-A-miNC 1 and 32/17-A-AR 3

5.3 Action Required

32/17-A-AR 1 - IÉ-IM should review, clarify and document within the SMS the interface between the IM and the 'Procurement Department'.

This review should at a minimum consider:

- Interface arrangements and communication channels
- Management of change to procurement documents and processes which may affect the IM

PCD: 6 Months

32/17-A-AR 2 - Implementation of Sections 4.5.1 and 4.5.2 of CCE-SMS-009.

No evidence was available to demonstrate that sections 4.5.1 and 4.5.2 of CCE-SMS-009 v5 [B.00.08] were being implemented. IÉ-IM (CCE) should review these requirements to determine their basis and take suitable actions to address this outcome.

PCD: 6 Months

32/17-A-AR 3 - Procurement Processes for purchasing below €50,000.

The process used for the assessment of suppliers against the quality management, production management and technical control requirements in line with CCE-SMS-009 [B.00.08] sections 4.3.1, 4.3.2 and 4.3.3 may benefit from formalisation. Specifically IÉ-IM (CCE) should review the need for documented procedures including templates used and records kept.

Also consider 32/17-A-miNC 1 and 32/17-A-miNC 2

PCD: 6 Months

32/17-A-AR 4 - IÉ-IM (CCE) should review the position of Senior Engineer Production Planning and determine the need for a nominated deputy.

Given the key procurement processes undertaken and key records held by the Senior Engineer Production Planning, IÉ-IM (CCE) should determine the need for a nominated deputy.

PCD: 6 Months

5.4 Scope for Improvement

32/17-A-SFI 1 - Clause 1.3.3 of CCE-SMS-009.

It may be beneficial to test clause 1.3.3 of CCE-SMS-009 to determine if suppliers can comply with such a request and to see if maintenance of the requisite requirements of the standard are ensured by the supplier throughout the life of a contract, particularly in the case where quality issues are identified.

32/17-A-SFI 2 - Component specifications including drawings and technical requirements.

IÉ-IM (CCE) might clarify in the SMS who holds specifications including drawings and technical requirements and where they are retained.

5.5 Audit Trail

n/a

Appendix A *FINAL AUDIT SCHEDULE*

Date	Start Time	End Time	Auditee Title	Auditee Name
28/08/2017	14:00	15:30	Head of Safety Infrastructure Manager	
30/08/2017	09:30	11:00	Depot Superintendent Portlaoise	
30/08/2017	11:30	13:00	CCE Quality Manager	
30/08/2017 01/09/2017	14:30 12:00	16:00 13:00	Procurement Manager	
30/08/2017	16:00	17:30	Head of Procurement	
31/08/2017	10:00	11:30	Senior Track & Structures Engineer Dublin	
31/08/2017	14:00	15:00	Infrastructure Production Plan Manager	
31/08/2017	15:00	16:30	Senior Engineer Production Planning	
01/09/2017	10:30	12:00	Materials Manager	
04/09/2017	14:00	15:00	Chief Civil Engineer (CCE)	
04/09/2017	15:00	16:30	Technical Manager CCE	
07/09/2017	10:00	11:00	Engineering Procurement Contracts Manager	
08/09/2017	10:00	11:30	Infrastructure Manager Limerick Junction	

Appendix B EVIDENCE REFERENCES

Reference No.	Name	Issue	Date	Comments
B.00.01	IM-SMS-001 Infrastructure Manager Safety Management System	V4.0	26.05.2017	
B.00.02	IM-SMS-006 Management of Safety Risk	V2.0	14/03/2016	
B.00.03	IM-SMS-008 Policy and Principles for Safety Planning and Monitoring	V2.0	17.02.2017	
B.00.04	IM-SMS-009 Policy and Principles for Procurement of Suppliers of Materials, Services and Works	V2.0	24.02.2016	
B.00.05	IM-SMS-014 Safety Approval of Changes in Plant, Equipment, Infrastructure and Operations (PEIO)	V2.0	14/03/2016	
B.00.06	CCE-SMS-001 CCE Safety Management System	V5.1	22.02.2017	
B.00.07	CCE-SMS-006 Hazards and Risk Assessments	V3.0	25.03.2013	
B.00.08	CCE-SMS-009 Approved Supplier of Safety Critical equipment	V5.0	01/04/2017	
B.00.09	CCE-SMS-009 Approved Supplier of Safety Critical equipment	V4.0		
B.01.01	IÉ-IM Safety Audit Programme 2017	V6.0	31/07/2017	
B.01.02	Report of Investigation into Explosion of Detonators in the cab of a DART train in Bray station	Issue 1	17/05/2013	
B.02.01	B.02.01 CCE SSOW - PRSD 24 - Loading of 36 meter Rail Bellview	2	12/07/2017	
B.02.02	CCE SSOW - PRSD 4 Loading and Unloading of Rail A-Frame	4	24/07/2017	
B.02.03	Form CCE-PLM-OPS-054 V1.0 Records of quality checks from panel assembly (including gauge checks)		06/06/2017	
B.02.04	Form CCE-PLM-OPS-054 V1.0 Records of quality checks from panel assembly (including gauge checks)		06/09/2017	
B.03.01	CCE-QMS-001	1.0	11/09/2017	

B.03.02	CCE-IMS-001	1.0	01.10.2017	
B.03.03	CPO-007	V 1	12/05/2017	
B.03.04	Quality management audit 2016			
B.03.05	Quality Audit Schedule	-	-	
B.03.06	Quality report on calibration from 05/02/2015		05/02/2015	
B.03.07	Extract from CAR for Quality report on calibration from 05/02/2015			
B.04.01	Procurement Supply Chain Overview	n/a	n/a	
B.04.02	Tender Request Pipeline, Tender Request Form	n/a	n/a	Extract from live page
B.04.03	IE Standard Contract (Goods)		24/11/2016	
B.04.04	CIE Group Procurement Policies and Procedures (soft copy)		July 2016	
B.04.05	PQQ 6880 Draw Gear, Screw Couplers and Wear Plates			
B.04.06	n/a			List of Safety Critical Components Not Available from interviewee
B.05.01	CIE Group Procurement Policies and Procedures		July 2016	
B.05.02	Records of briefing of CPO-007		05/09/2017	
B.05.03	CPO-007	V 1	12/05/2017	
B.05.04	Contractual requirements for a supplier to notify IÉ of changes to the suppliers organisation or the supplied component or material which may impact IÉ			
B.06.01	Points and Crossings Order Form	-	-	
B.07.01	Evaluation panel records including PQQ for supply of thermit welding. Tender reference 6669			
B.07.02	Evaluation panel records including PQQ for supply of W14 track fastening system. Tender reference 6256			
B.07.03	Record for material pre-delivery inspection			
B.07.04	Record for material post-delivery inspection			Delivery Receipt

B.07.05	n/a			Supplier notification to IÉ of change to sub supplier - no example available
B.08.01	CCE-SMS-009	V 1.0	30/01/2011	
B.08.02	Screw Type W 14 with Tension Clamp SKL 14 Specification Document with Additional Requirements	n/a	n/a	
B.08.03	Pre-Qualification Records for Buffer Example			
B.08.04	Pre-Qualification Records for Lubricator Example			
B.08.05	Records of example discussed of issues with double coil spring washer			
B.08.06	Records of example discussed of issues with progress rail layout and actions taken (including contractual changes, performance regime and abatements)			
B.08.07	n/a			
B.08.08	Records of example discussed of issues surrounding changes to buffer design and actions taken			
B.08.09	Documented examples of contractual requirements for a supplier to notify IÉ of changes to the suppliers organisation or the supplied component or material which may impact IÉ			
B.08.10	P&C Abatement schedule and performance regime in place with Progress Rail			
B.09.01	Screenshot of Procurement front page on SharePoint	n/a	n/a	Extract from live page
B.09.02	Form: Derogation from requirement to publish a call for competition	n/a	n/a	Extract from live page
B.10.01	Tender Status Report (Week 35)	Week 35	03/09/2017	
B.11.01	Specification - UBE16 Synthetic Waybeams			
B.11.02	List of safety critical components			
B.11.03	Advisory Note – Technical Requirements for Buffer Stops			
B.12.01	Examples of letters sent to various contractors	n/a	Various	

	following poor performance or breaches of the contract			
B.12.02	Schedule 6 Performance Regime including Penalties for contractual breach	n/a	n/a	