wsp

AYGM

HALKALI - CERKEZKOY HIGH SPEED RAILWAY

Emergency Response Framework

wsp

AYGM

HALKALI - CERKEZKOY HIGH SPEED RAILWAY

Emergency Response Framework

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70069878

OUR REF. NO. 70069878

DATE: APRIL 2021

CONTENTS

1 INTRODUCTION

1.1 PURPOSE OF THIS EMERGENCY RESPONSE FRAMEWORK

1.1.1. This Emergency Response Framework (ERF) provides an overarching framework that describes the core approach to be used to identify potential emergency events that should be included in the Emergency Response Plan(s) (ERPs) to be developed by the Contractor during the construction phase and TCDD Transport during the operational phase.

1.1.2. This document provides the overall core approach and commitment to emergency response for the Project, whilst the detailed ERP(s) specify the specific command, control and response actions. The ERPs are to be used in conjunction with this ERF in the management of an emergency event.

1.1.3. The purpose of this ERF is to:

- Outline the applicable legislative framework, requirements and standards relevant to the Project's emergency preparedness and response activities;
- Define AYGM's and TCDD Transport's Project commitments in relation to emergency events;
- Present an overview of Project safety and environmental hazards during the construction and operation phase (i.e. those hazards which may cause emergency events);
- Define implementation roles and responsibilities and set out applicable management interfaces for emergency events;
- Outline the Emergency Response Plan requirements, and the process for identifying effective response measures, and their integration into existing systems and the organisational culture;
- Define monitoring and reporting procedures, including Key Performance Indicators (KPIs) for emergency events; and
- Define training requirements for emergency events.

1.2 SCOPE, APPLICATION, AUTHORITY AND MANAGEMENT

1.2.1. The scope of this ERF is to cover all activities that have the potential to generate emergency events[1] during the construction and operational phases of the Project.

1.2.2. This ERF is applicable to all Project facilities (e.g. construction work areas, construction compounds, train stations, etc.), Project personnel (AYGM and TCDD Transport employees), the Contractor and their Sub-Contractors involved in the Project, and all authorised visitors to the Project. This includes but is not limited to the following types of emergency events: transportation, fire and explosion; unauthorised access by third parties and uncontrolled releases to the environment which could potentially result in harm.

1.2.3. The Contractor (construction phase) and TCDD Transport (operational phase) will both prepare the detailed construction and operation ERPs aligned with this ERF.

---

[1] A sudden, unexpected, or impending undesired event or situation that causes, or has the immediate potential to cause, injury, loss of life, damage to assets or the environment, damage to reputation or interference with the normal business.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 1 of 30

1.2.4. The ERPs must be developed prior to either the construction or operation phase for which they are required, commencing to achieve appropriate and effective emergency preparedness and response activities for foreseeable emergency events should they arise.

1.2.5. This ERF will be managed and controlled by the AYGM Project Implementation Unit (PIU) during the design and construction phase and TCDD Transport during the operational phase. Any requests for changes to this ERF must be addressed to the PIU during construction and TCDD Transport during operation and will be subject to their review and approval.

1.3 PROJECT MANAGEMENT PLANS

1.3.1. This ERF is part of the overall suite of Management Plans developed for the Project, as described in the **Environmental and Social Management Plan** (ESMP) for the Project. The ESMP is provided in Chapter 19 of the **Environmental and Social Impact Assessment** (ESIA).

1.4 PROJECT OVERVIEW

1.4.1. The Project will provide passenger and freight services connecting Istanbul (at the existing Halkali Station) to the district of Cerkezkoy and will link to the under-construction Cerkezkoy-Kapikule railway, which is partially funded by the European Union (EU). The Project, together with the in construction Cerkezkoy-Kapikule railway, will be part of the Trans-European Transport Network (TEN-T) connecting to Turkey's European border (at Kapikule).The Project and the Cerkezkoy-Kapikule railway will together form one integrated railway system with full interoperability.

1.4.2. The Project will consist of the following (a detailed description of the Project is provided in **Chapter 2: Description of the Project** of the **ESIA**):

- A new double track 9km line (i.e. two new lines) between Halkali Station and Ispartakule Station. In order for the Project to pass under the proposed Kanal Istanbul a 6km twin-bored tunnel will be constructed in this section. The twin-bored tunnel will contain two high-speed tracks with one line for each direction (though bi-directional operation will also be possible, if necessary). The twin-bored tunnel tracks will suitable for use by both conventional and high-speed trains. Conventional trains will re-join the existing railway prior to Ispartakule Station;
- A new double track 67km line from Ispartakule to a location adjacent to the east of Cerkezkoy Station (approximately 1km from the centre of Cerkezkoy);
- Modification of existing infrastructure, but not buildings, at the 3 existing stations (Halkali (0km), Ispartakule (9km) and Çatalca (32km)), including the provision of footbridges, platforms and additional tracks;
- New ancillary structures, inclusive of bridges, viaducts, tunnels, overpasses and underpasses;
- Supporting power supply systems, inclusive of overhead lines and substations; and
- Supporting electrification, signalling and control systems.

1.4.3. The Project location is shown on Figure 1-1.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 2 of 30

Legend

● Town

⊠ Railway Station (Current)

╫ Existing Railway Route

━ Proposed Railway Route

Black Sea

END

Cerkezkoy CH76+000

Çerkezköy
İstasyon
Çerkezköy
Çayırdere
Çayırdere
Büyükçavuşlu Merkez
Beyciler
Sinekli
Küçüksinekli
Mızraklı
Büyüksinekli
Bekirli
Kabakça
Kabakça
Gökçeali
Kurfallı
Akören
İnceğiz
İzzettinköy
İzzettin
Kaleiçi
Çatalca
Catalca CH31+800
Çatalca
Ferhatpaşa
Bahşayış
Yeşilbayır
Ömerli
Karaağaç Mah.
Orhangazi
Ispatarkule CH9+373
Bahçeşehir
Ispartakule
Tahtakale
Melantias
Esenkent
Ardıçlı
Halkalı
Halkali CH0+000
START
Halkalı

Turkey

Sea of Marmara

Turkey

Note:

Drawing Status
FINAL

Job Title:
HALKALI – CERKEZKOY HIGH SPEED RAILWAY

Drawing Title
Figure 1-1 - Project Location

Scale at A4
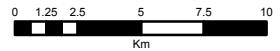**1:300,000**

Drawn
DG

Stage 1 check	Stage 2 check	Originated	Date
JK	JW	DG	20/10/2020

0 1.25 2.5 5 7.5 10
Km

Drawing Number
Figure 1-1

wsp

1.5 GLOSSARY

1.5.1. The definition of key terms used in this ERF are provided in Table 1-1. These definitions have been developed by reference to the definitions used in EU and Turkish legislation and guidance relevant to emergency events as well as industry best practice.

Table 1-1 - Key Terms

Term	Definition
Assembly Area	A designated place where people have been told to assemble after evacuating a building/site/location in an emergency event.
Crisis	An abnormal situation which goes beyond the normal emergency procedures and presents a high risk to business, draws media attention and may threaten public trust.
Emergency	An imminent or actual event that threatens people, property or the environment and which requires a co-ordinated and rapid response that may be managed locally without the need for added response measures or changes to procedure. An emergency may develop into a crisis if normal emergency procedures do not bring the undesired event under control.
External Emergency Responders	Public fire and emergency services.
Emergency Response	The efforts to mitigate the impact of an emergency event.
Emergency Response Team (ERT)	A group of designated persons who are trained in appropriate emergency response activities in order to respond in the event of an emergency.
Emergency Preparedness	Actions taken in anticipation of an emergency to facilitate rapid, effective and appropriate response to the emergency event.

1.6 ABBREVIATIONS

The abbreviations used in this ERF are provided in Table 1-2.

Table 1-2 - Abbreviations

Abbreviation	Description
AIIB	Asian Infrastructure Investment Bank
AYGM	General Directorate of the Infrastructural Investment
CESMP	Construction Environmental and Social Management Plan
CLOs	Community Liaison Officers
EBRD	European Bank of Reconstruction and Development
EMT	Emergency Management Team

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 4 of 30

Abbreviation	Description
ERF	Emergency Response Framework
ERP	Emergency Response Plan
ERT	Emergency Response Team
ESHS	Environmental, Social, Health and Safety
ESIA	Environmental Social Impact Assessment
ESMP	Environmental Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
HSE	Health Safety Environment
OESMP	Operational Environmental Social Management Plan
PIU	Project Implementation Unit
PR	Performance Requirement
TCDD Transport	TCDD Taşımacılık

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 5 of 30

2 LENDER'S PERFORMANCE REQUIREMENTS, EU STANDARDS, LEGISLATIVE AND POLICY CONTEXT

2.1 OVERVIEW

2.1.1. The purpose of this chapter is to outline the Lender's policy requirements, national legislative requirements and EU legislative requirements, which have informed the structure and scope of this ERF. Further information on legislative and policy requirements for the Project is provided in **Chapter 4: Lenders Performance Requirements, EU Standards, Legislative and Policy Context** of the **ESIA**.

2.1.2. Where requirements are inconsistent, the Project will meet the most stringent of these.

2.2 LENDER'S PERFORMANCE REQUIREMENTS

2.2.1. The Project and this ERF have been developed in accordance with Lenders policies and requirements, specifically the European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy and Performance Requirements (PRs) 2014. The Asian Infrastructure Investment Bank (AIIB) have elected to adopt the to apply the EBRD's environmental and social requirements on the Project, in accordance with provisions in their Environmental and Social Framework (ESF) 2019.

2.2.2. The Project will be in compliance with PR4: Health and Safety, which sets out requirements with regard to emergency preparedness and response in accordance with EU requirements.

2.3 NATIONAL LEGISLATIVE REQUIREMENTS

2.3.1. The applicable legislative framework for the ERF is listed as follows:

- Occupational Health and Safety Law No. 6331, Official Gazette Date/Number: 30.06.2012/28339 (last amended on 28.11.2017)
- Regulation on Health and Safety in Construction Works, Official Gazette Date/Number: 05.10.2013/28786.
- Regulation on Emergencies in Workplaces, Official Gazette Date/Number: 18.06.2013/28681.
- Regulation on Fire Protection of Buildings, Official Gazette Date/Number: 19.12.2007/26735 (last amended on 05.02.2018).
- Regulation on the Health and Safety Measures to be taken in Workplace Buildings and Annexes. Official Gazette Date/Number: 17.07.2013/28710.
- Law About Aids to be Made with Actions to be Taken Because of Disasters Effective to Public Life, Official Gazette Number: 15.05.1959/7269.

2.4 EU LEGISLATIVE REQUIREMENTS

DIRECTIVE 1989/391/EEC – OCCUPATIONAL SAFETY AND HEALTH

2.4.1. The European Framework Directive on Safety and Health at Work (Directive 89/391/EEC) adopted in 1989 sets out measures to encourage improvements in the safety and health of workers at work.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 6 of 30

2.4.2.　In relation to emergency response, Article 8 of this Directive places responsibility on the employer to take necessary measures for first aid, fire-fighting and evacuation of workers, in serious and imminent danger, and to provide any necessary contacts with external services for first aid, emergency medical care, rescue work and firefighting.

DIRECTIVE 1989/654/EEC – WORKPLACE REQUIREMENTS

2.4.3.　The Directive on workplace requirements (Directive 89/654/EEC) of 30 November 1989 defines the minimum safety and health requirements for the workplace (first individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC). In relation to emergency response, these workplace requirements include emergency routes and exits, fire detection and fire-fighting and first aid rooms/equipment.

REGULATION NO. 402/2013, AS AMENDED BY REGULATION 2015/1136IS - THE COMMON SAFETY METHOD - RISK ASSESSMENT (CSM-RA)

2.4.4.　This Regulation provides a framework for safety assessment and risk acceptability on railways, whereby the majority of risks are managed by adherence to 'Codes of Practice' or 'Reference Systems'. Where these methods cannot be applied, an 'Explicit Risk Assessment' is used based on the laws and standards of the particular EU country, which vary widely. In the UK the principle applied is that risk should be reduced 'So Far as Is Reasonably Practicable' (SFAIRP). In accordance with EBRD guidance, as described in **Chapter 4: Lender's Performance Requirements, EU Standards, Legislative and Policy Context**. The Project is expected to meet the most stringent of either the host country (Turkey) regulations, or EU substantive environmental standards, if they differ. Although Turkey has not adopted the CSM-RA Regulation, AYGM has agreed that they will strive to comply with it. This has therefore been taken as the best benchmark methodology for Railway Safety for the Project.

2.4.5.　The CSM-RA covers hazards, provides a framework for assessment and details management measures, among other things, for the adequacy of emergency response provision (e.g. evacuation paths, fire detection and firefighting measures, communications, operating procedures and regular drills and practices).

TECHNICAL DIRECTIVE EU 2016/797 - INTEROPERABILITY OF THE RAIL SYSTEM

2.4.6.　This EU Directive defines the requirement for Technical Specifications for Interoperability (TSIs), which ensure interoperability between the different parts of the European Rail Network. Interoperability is required to ensure trains, passengers and train crew from one EU country, can operate safely and reliably in all other EU countries, and it is achieved by ensuring the compatibility of rail systems and minimum safety requirements. The Safety in Railway Tunnels TSI specifies the technical provision and some operational rules that form part of the emergency response for incidents in tunnels. Whilst the Operation and Traffic Management TSI specifies that the railway operator will have in place measures to manage emergency situations.

2.4.7.　Although not mandatory in Turkey, the Project has agreed to adopt the TSIs in order to ensure compatibility with train movements from neighbouring countries. These TSIs are primarily concerned with interoperability, but they include specification element to ensure such interoperability will be safe. They also constitute 'Codes of Practice' that, if adhered to, can be used to evidence that relevant areas are safe according to the CSM-RA.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 7 of 30

3 ROLES AND RESPONSIBILITIES

3.1 OVERVIEW

3.1.1. An integrated approach to emergency preparedness and response involves a range of stakeholders, including AYGM (PIU), TCDD Transport, the Contractor (and their subcontractors), government ministries, local governorships and municipalities, emergency services, and members of the public. It also requires robust processes regarding information dissemination, training, roles and responsibilities, management actions, monitoring, control, and corrective actions to ensure continual improvement.

3.2 KEY ROLES AND RESPONSIBILITIES

3.2.1. Figure 3-1 shows the levels of management that may be needed in an unfolding undesired event.

Crisis
Crisis Management Committee

Major Emergency
Emergency Management Controller

Incident Scene
Incident Controller

Incident Hot Spot
ERT Leader
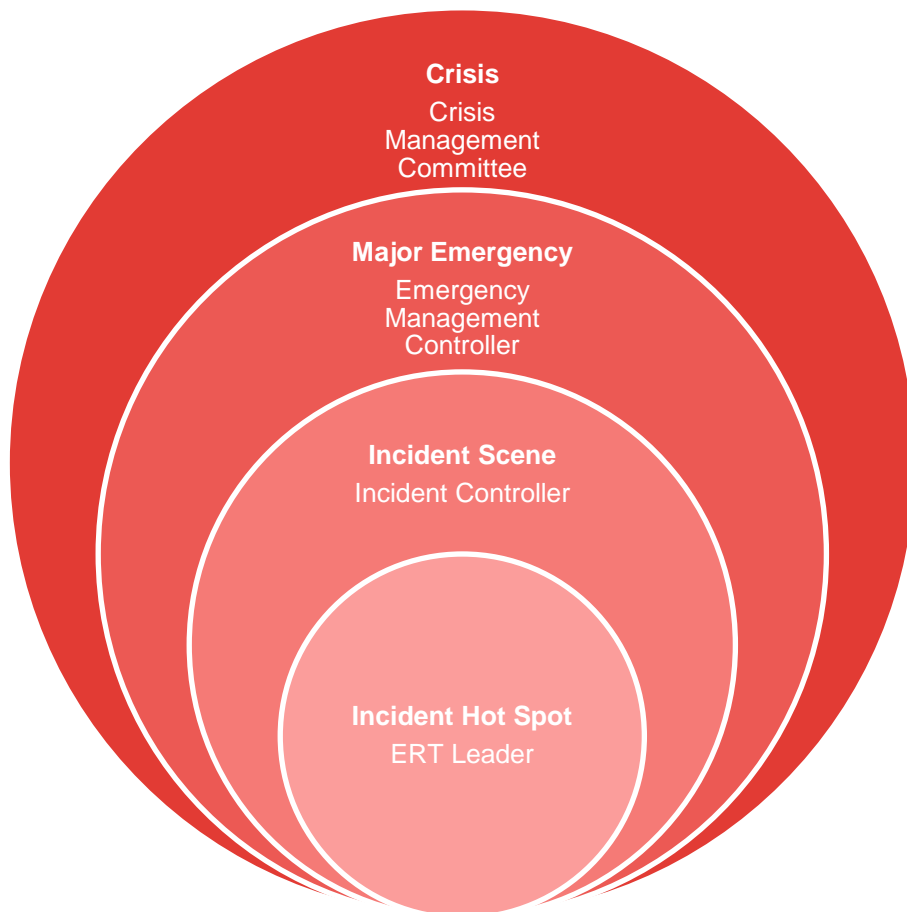
Figure 3-1 - Emergency Management Levels

3.2.2. The key roles and responsibilities for the implementation of the ERF, and the specified ERPs, for the PIU and contractor during construction and TCDD Transport during operation are outlined below in Table 3-1 and Table 3-2, respectively. Indicative organisational charts are provided below in Figure 3-2 and Figure 3-3 that illustrate the communication/reporting lines during construction and during operation.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 8 of 30

Table 3-1 - Key Roles and Responsibilities (Construction)

Role	Responsibilities
AYGM Project Implementation Unit (PIU)	Led by the PIU Manager. Responsible for the approval of ERF and resources required for its implementation, including provision of Accountability in Governance structure, Policy, Systems, Procedures, resources, Corporate safety culture and the development of a Crisis Management Committee for the construction phase. Ensure roles and responsibilities are clearly identified and allocated within the PIU. The PIU will set out requirements that the Contractor (and their sub-contractors) must adhere to in the tender documentation to appoint the Contractor.
Supervision Contract Manager	The Supervision Contract Manager will be responsible for supervising the construction Contractor to ensure that recommendations and requirements are met, as set out in the Construction ERP.
Crisis Management Committee	In the event of a crisis, all authority is surrendered by the Contractor Emergency Manager to the Crisis Management Committee to respond to early signs of crisis and to execute and coordinate the response. Members of the Crisis Management Team will be appointed by the PIU, and would include the Community Liaison Officers, Environmental Supervisor, Health and Safety Specialist and the Railway Safety Specialist, in addition to, media advisors and Human Resource representatives (as appropriate).
PIU Health and Safety Specialist	Overall responsibility for the elaboration and implementation of the ERF. Ensure Project compliance with Project standards and other requirements set out in this ERF. Development, monitoring and revision of the ERF during the design stage and construction. Assurance of the Contractor's preparation and implementation of the Construction ERP, as outlined in the **ESMP**. Monitoring of the Contractor's ERP implementation to ensure that it continues to be suitable and sufficient. The PIU Health and Safety will approve the Construction ERP prior to construction.
PIU Environmental / Biodiversity Specialist	Ensure Project compliance with Project standards and other requirements set out in this ERF.
PIU Community Liaison Officers (CLOs)	Responsible for conducting regular consultation with affected communities on any concern regarding the Project.
Contractor's Project Manager	Responsible for overseeing the construction of the Project, including planning and delivery. The Contractor's Project Manager will approve the Construction ERP prior to construction.
Contractor's Emergency Manager	The Emergency Manager will be responsible for coordinating the internal management response of the Contractor to a major emergency. The Contractor Emergency Manager will take on the role of Emergency Management Controller during a major emergency as shown in Figure 3-1 above and report to and work in coordination with the Crisis Management Committee, who shall prepare for and manage the response to the major emergency event. They will also liaise with external emergency response organisations and the PIU.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 9 of 30

Role	Responsibilities
Contractor Emergency Management Team (EMT)	The Contractor should establish an Emergency Management Team that reports to the Contractor Emergency Manager and ensures that the Project is in a state of "Readiness" if an undesired event should it occur. The members of the EMT should include those within the Contractor's team who have a role and responsibility during an emergency event, for example the Environmental Engineer, Health and Safety Lead, Social Lead and Railway Safety Manager, as well as external parties such as AYGM. The EMT will ensure that the construction ERP is in place that outlines the strategy for managing emergency situations and that the plan is regularly reviewed and tested.
Contractor Incident Controller	The Contractor Incident Controller controls the emergency event scene, management of the response, direct ongoing response actions in consultation with ERT Leader. The Contractor Incident Controller reports to the Emergency Manager (as Emergency Management Controller) in the event of an emergency.
Contractor Health and Safety Lead	Responsible for the preparation and implementation of the Construction ERP, on behalf of the Contractor, prior to and during construction. The Construction ERP will set out the systems, processes and procedures, resources, roles and responsibilities of the Contractor, and their sub-contractors, in relation to emergency preparedness and response.
	They will be responsible for evaluating the risk associated with emergency events, and must have appropriate training in evaluating emergency events, and prior experience in evaluating the risks for high speed rail projects.
	The Contractor H&S Specialist may take on the role of Contractor Incident Controller. See below for further details.
Contractor Emergency Response Team (ERT) Leader	Lead and co-ordinate response to any emergency event by the ERT by initially assessing the situation and providing clear direction to members of the ERT in line with the Construction ERP. The ERT Leader reports directly to the Contractor Incident Controller and initially contacts the Contractor Incident Controller notifying them of the emergency and providing them regular updates who then updates the Emergency Manager. The Contractor ERT Leader also receives reports from Muster Checkers[2] and informs the Contractor Incident Controller of any missing personnel.
Contractor Emergency Response Team (ERT)	The ERT may include: first aiders, fire response team (including search and rescue), spill response team, emergency response directing staff and support functions (e.g. security, logistics, transport, social, etc).
Contractor's Environmental Engineer	Responsible for reporting and supervising environmental activities during construction, such as spills.
Contractor's Sub-contractors	Application and compliance with the ERF and Construction ERP.
	Contribute to the Contractor's emergency response planning activities in accordance with the **Contractor Management Plan.**

---

[2] A Muster Checker is an individual who assist during an emergency evacuation to check that all personnel have reached the designated assembly point safely.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 10 of 30

Figure 3-2 - Emergency Management Organisation Chart (Construction)

Table 3-2 - Key Roles and Responsibilities (Operation)

Role	Responsibilities
Crisis Management Committee	In the event of a major emergency, all authority is surrendered by TCDD Transport's Emergency Manager to the Crisis Management Committee to respond to early signs of crisis and to execute and coordinate the response.
	Members of the Crisis Management Team will be appointed by TCDD Transport, and would include the Health and Safety Lead, Engineer Manager and Environmental and Social Manager, in addition to, media advisors and Human Resource representatives (as appropriate).
TCDD Transport (and TCDD)	Ensure Project compliance with Project standards and other requirements set out in this ERF during operation, including provision of Accountability in Governance structure, Policy, Systems, Procedures, resources, Corporate safety culture and the development of a Crisis Management Committee for the operation phase.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 11 of 30

Role	Responsibilities
	Overall responsibility for the Operational ERP that aligns with the Project ERF prior to the start of the operational phase of the Project, as outlined in the **ESMP**. Development, monitoring and revision of the Operational ERP during operation. Monitor the ERP to ensure that it continues to be suitable and sufficient.
TCDD Transport Project Manager	Responsible for overseeing the operation of the Project. The TCDD Transport Project Manager will approve the Operational ERP prior to operation.
TCDD Transport Emergency Manager (part of TCDD Transport wider railway operations)	In case of major emergency events such as natural disasters (including high magnitude earthquakes), terrorist attack, workers collective riots, civil and political disturbance, major fire or explosions; the Emergency Manager will be responsible for coordinating the internal management response. The TCDD Transport Emergency Manager will report to will take on the role of Emergency Management Controller during a major emergency and work in coordination with the Crisis Management Committee (CMC), who shall prepare for and manage the response to the major emergency event. They will also liaise with external emergency response organisations, and TCDD Transport, including the Health and Safety Lead, Engineer Manager and Environmental and Social Manager.
TCDD Transport Emergency Management Team (EMT)	TCDD Transport should establish an Emergency Management Team that reports to the TCDD Transport Emergency Manager and ensures that the Project is in a state of "Readiness" of an undesired event should it occur. The members of the EMT should include those within the TCDD Transport team who have a role and responsibility during an emergency, for example the Health and Safety Lead, Engineer Manager and Environmental and Social Manager, in addition to, media advisors and Human Resource representatives (as appropriate) and external parties. The EMT will ensure that an emergency response plan is in place that outlines the strategy for managing emergency situations and that the plan is regularly reviewed and tested.
TCDD Transport Health and Safety Lead	Responsible for the preparation and implementation of the Operational ERP, on behalf of the TCDD Transport, prior to and during operation. The Operational ERP will set out the systems, processes and procedures, resources, roles and responsibilities of TCDD Transport, and their sub-contractors, in relation to emergency preparedness and response. They will be responsible for evaluating the risk associated with emergency events, and must have appropriate training in evaluating emergency events, and prior experience in evaluating the risks for high speed rail projects. (The TCDD Transport H&S Specialist may take on the role of TCDD Transport Incident Controller. See below for further details).
TCDD Transport Environment and Social Manager	Ensure Project compliance with Project standards and other requirements set out in the Operation ERP in relation to environmental aspects. TCDD Transport Environment and Social Manager is also responsible for ensuring that regular consultation is conducted with affected communities on any concern regarding the Project.
TCDD Transport Incident Controller	Control the emergency event scene, management of the response, direct ongoing response actions in consultation with ERT Leader. The TCDD Transport Incident Controller reports to TCDD Transport's Emergency Manager.
TCDD Transport Emergency	Lead and co-ordinate operational response to any emergency event by the ERT by initially assessing the situation and providing clear direction to members of the ERT in line with the Operational ERP. The ERT Leader reports directly to the Contractor

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 12 of 30

Role	Responsibilities
Response Team (ERT) Leader	Incident Controller and initially contacts the TCDD Emergency Incident Controller notifying them of the emergency and providing them regular updates who then updates the Emergency Manager. The Contractor ERT Leader also receives reports from Muster Checkers and informs Emergency incident Controller of any missing personnel.
TCDD Transport Emergency Response Team (ERT)	The ERT may include: first aiders, fire response team (including search and rescue), spill response team, emergency response directing staff and support functions (e.g. security, logistics, transport, social, etc).
TCDD Transport Sub-contractors	Application and compliance with the Operational ERP, and contribute to the TCDD Transport emergency response planning activities as required by TCDD Transport Emergency Manager and TCDD Transport EMT.
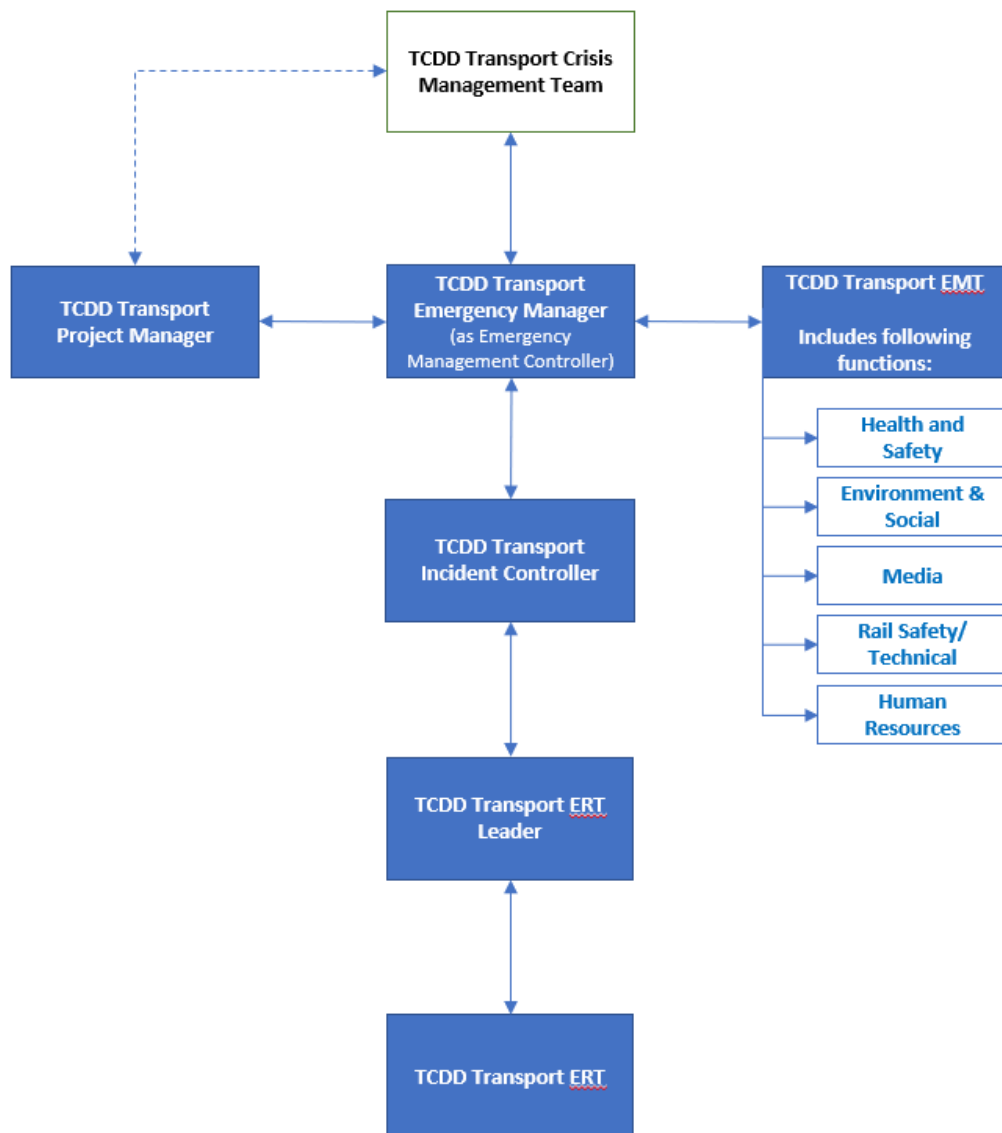
Figure 3-3 - Emergency Management Organisation Chart (Operation)

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 13 of 30

3.3   KEY INTERFACES

3.3.1.   Key interfaces in the implementation of this ERF include:

- If the Lenders finance the Project, monitoring reports will be required to be submitted to the Lenders on the environmental, social, health and safety (EHSS) performance of the Project, including emergency response during construction and operation.
- The Project involves work adjacent to and over/under existing lines, and as such AYGM PIU/ Construction Contractor will need to liaise with TCDD Transport during the construction phase. There will be certain situations where there is an interface between the operation of the existing railway and the construction works which will need to be managed appropriately to avoid/minimise the health and safety risks to both construction workers and TCDD Transport personnel, for example in some cases there may be the need to close existing railway lines.
- PIU CLOs will ensure that the Construction ERP identifies local communities that may be affected by an emergency event associated with the Project. The Construction ERP will include how potentially affected communities will be informed of any emergency events in a timely manner. Specific community safety related activities are in the **Health and Safety Plan** (described in the **ESMP**). This role will be undertaken by the TCDD Transport Environmental and Social Manager during operation.
- For the construction phase the Contractor's Health and Safety Lead will liaise with the Contractor's Project Manager in relation to the implementation of construction phase activities to manage sources of potential safety and emergency events. For the operational phase TCDD Transport's Health and Safety Lead will liaise with TCDD Transport's Project Manager to manage sources of potential safety and emergency events.
- The Contractor's Health and Safety Lead will also liaise with the Contractor's Environmental Engineer in relation to the implementation of construction phase activities to manage sources of potential environmental emergency events.
- TCDD Transport's Health and Safety Lead will liaise with the TCDD Transport's Training Team (part of TCDD Transport wider railway operations) who will be accountable for implementing the health and safety training required as described in the **Health, Safety and Security Plan** (described in the **ESMP**).

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 14 of 30

4 EMERGENCY MANAGEMENT AND RESPONSE

4.1 OVERVIEW

4.1.1. The management of an emergency event aims to:

- Protect or mitigate the impact on life and the health of people;
- Protect or mitigate the impact on property (including project assets, worksite, camp and offices);
- Protect or mitigate the impact on the environment;
- Bring the event under control and back to normal operation;
- Maintain clear lines of communication with external emergency response services, governmental agencies, etc.; and
- Comply with Turkish legal requirements and Lender's requirements.

4.1.2. This will involve all levels of management and employees, during the emergency event.

4.1.3. Emergency management is an ongoing process of planning, checking and reviewing so as to react effectively when an undesired event occurs. This process consists of the following phases:

- Prevention / Risk Minimisation - eliminating the potential causes of emergencies or reducing the risk of occurrence;
- Preparedness - Preparing for an emergency event;
- Response - Planned response to an emergency event;
- Recovery - Process of returning to normal operations; and
- Mitigation - Minimising of the impacts of an emergency event.

4.1.4. Thorough attention to these phases can reduce the undesirable consequences of an emergency.

4.1.5. Prevention of an emergency event is a proactive pre-event process in which the work procedures and the related equipment are reviewed for their hazards, potential modes and risk of failure. To achieve this, each task involved in the execution of an activity/procedure is assessed, and suitable control measures are defined and implemented to minimise or prevent the failures. ERP sets out the review process that must be implemented prior to the commencement of an activity, in order to identify the control measures.

4.1.6. The construction and operation ERPs will comply with relevant national legislative requirements, as outlined in Section 2.3. The ERPs must be based on an assessment of risk and follow the five step approach described below:

1. Identify all potential emergency events;
2. Evaluate the risk associated with the emergency event;
3. Develop ERP measures for the emergency event (for inclusion in the ERP);
4. Implement the ERP measures; and
5. Monitor and continually review the ERP measures.

4.2 STEP 1 - IDENTIFY ALL POTENTIAL EMERGENCY EVENTS

4.2.1. A risk identification and assessment exercise will be carried out prior to construction and operation to identify events and risk scenarios that may impact the Project in those phases. The output of these exercises will then be incorporated as management arrangements within the detailed Emergency Plans / Procedures for each phase of the Project.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 15 of 30

4.2.2. First, the characteristics of the Project area (including social, environment, infrastructure and hazardous sites) need to be described as this will influence the likelihood and the impact of a major emergency. Determining the local and regional context of the Project will provide an understanding of the vulnerability and resilience of the area to emergencies.

4.2.3. Risks will be derived from:

- Risk identification processes undertaken as part of previous feasibility studies and assessments;
- Critical and semi-quantitative risk assessments undertaken as part of the H&S management system; and
- Environmental and Social risk analysis undertaken as part of the ESIA.

4.2.4. Second, hazards need to be reviewed and identified, including any particular features of these hazards specific to the region and then specific to the local area. Typically, the hazards identified follow the following major event categories, namely natural, technological or manmade.

4.2.5. Potential emergency events that could impact Project-related activities, personnel or assets and will be considered in the ERPs comprise:

- Earthquakes;
- Landslides;
- Sink holes;
- Groundwater flooding;
- Extreme temperatures – heatwaves and low (sub-zero) temperatures;
- Storms;
- Gales;
- Snow storms;
- Thunderstorms;
- Fog;
- Extreme rainfall;
- Severe Space Weather;
- Solar flares;
- Wildfires, forest fire, bush, brush and pasture;
- Poor air quality;
- Disease epidemic or pandemic and animal diseases, e.g. avian and human pandemic;
- Invasive plant outbreaks;
- Industrial action;
- Community unrest;
- Displaced population;
- Criminal, sabotage or arson attack;
- Security emergency;
- Civil / political disturbance;
- Rail Accidents;
- Road Accidents (or road obstruction / closure);
- Waterway Accidents;
- Aviation Accidents;
- Spillage of hazardous or potentially hazardous materials (on or off site);
- Access road closure;
- Incident Classification;

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 16 of 30

- Recovery from confined space and excavations;
- Air Pollution Accidents;
- Land Pollution Accidents;
- Water Pollution Accidents;
- Utilities failures;
- Unexploded ordnance;
- Malicious attacks - chemical, biological, radiological and nuclear;
- Malicious cyber-attack;
- Interruption to or failure of telecommunications systems;
- Failure of significant computer systems;
- Bridge failure;
- Flood defence failure;
- Property or bridge demolition accident;
- Tunnel failure;
- Fire (contained and conflagration); and
- Explosion (accident or terrorist).

4.2.6. The hazards identified in the Project area should be listed as shown in Appendix A. Any hazards that are not relevant to the Project area should be deleted and new hazards added, if required, to provide a complete list of hazards. For each identified hazard, the elements of the workforce and community that are at risk should be identified. Both the hazards to the workforce/community and their likely point of impact should emerge from this task.

4.3   STEP 2 - EVALUATE THE RISK ASSOCIATED WITH THE EMERGENCY EVENT

4.3.1. Once emergency events for the Project have been identified, the risk of these events happening will be evaluated. A risk matrix approach will be used to help identify the areas where mitigation action is most needed. The risk assessment will start with an examination of the impact (severity of consequences to life and health, property and infrastructure and the environment) of the hazards identified. The likelihood (probability) also has to be considered with the results recorded on a risk matrix. Using this type of matrix, the Construction or Operation H&S Specialist, depending on the Project phase, will categorise each risk or emergency based on the impact it would have if it occurred and on the likelihood of the event happening in the Project area.

4.3.2. There are five levels of consequence to guide an emergency event as shown in the Table 4-1.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 17 of 30

Table 4-1 - Emergency Event Classification

Foreseeable worst Case Consequence Rating		Insignificant	Minor	Moderate	Major	Catastrophic
		1	**2**	**3**	**4**	**5**
		Consequence				
Impact Categories	**General**	Requires response from departmental staff under routine procedures.	Material deterioration in achievement of results. Requires response from management.	Significant deterioration in achievement of results. Requires response from division management.	Fundamental threat to operating results. Requires immediate senior management attention.	Threatens survival of the site/company in its current form. Requires full-time senior management attention.
	H&S	First Aid	Medical Aid	Lost Time Accident	Fatality and Multiple Major Injuries	Multiple Fatalities
	Environmental	Negligible environmental impact.	Non-material (minor) environmental impact.	Material environmental impact.	Serious (major) environmental impact.	Catastrophic irreversible impact to environment.
	Community, Media, Reputation	Some community complaints, adverse local public or media attention.	Some adverse Regional media attention for a brief period. Criticism by NGOs.	Some national media / public / NGO attention for an extended period.	Persistent adverse national media / public / NGC attention.	Adverse international media. Damaging NGO campaign. License to operate compromised.

4.3.3. The risk assessment should be recorded in a template such as the example provided in Appendix B. The risk assessment identifies the various hazard types, the risks associated with these hazard types, with an initial consequence rating allocated. Existing emergency control measures are identified, and a final consequence rating given based on these control measures being in place. Final consequence rating of 3 and above require additional control measures to be established. The existing and the additional control measures will be incorporated into the construction and operational ERPs.

4.3.4. All emergency events with a Major consequence (e.g. single fatality and multiple major injuries) or catastrophic (e.g. multiple fatalities) require notification to the PIU immediately.

4.3.5. Notification procedures will be set-out in a **Health, Safety and Security Plan** prepared by the PIU prior to construction, as described in the **ESMP**. In addition, incidents (including emergency events) will be included in monthly environmental, health, safety and social reports during construction and in annual ESHS reports during operation to the Lenders.

4.3.6. The Contractor H&S Lead / TCDD Transport H&S Lead conducting this evaluation must have the training, experience and competency outlined in the roles and responsibilities in **Section 3**, to ensure they have the required expertise to evaluate the potential emergencies and the impacts.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 18 of 30

4.4 STEP 3 - DEVELOP ERP MEASURES FOR THE EMERGENCY EVENTS

4.4.1. The primary aim of the Construction and Operation ERPs associated with the ERF, are to provide detailed emergency preparedness and response procedures which take into account location / task specific requirements, including roles and responsibilities, related instructions, emergency evacuation mapping, emergency phone numbers, fire detection and fighting applications, etc.

4.4.2. For each individual emergency scenario identified in Step 1 and 2 above, the following approach should be followed when developing ERPs:

- Define objective(s) of emergency procedure;
- Define means of raising alarm;
- Define assembly area(s)/evacuation route(s);
- Define means to account for personnel;
- Identify relevant local/regional authorities and their contact details;
- Define casualty management requirements and responsibilities;
- Identify potential affected off-site areas and means of warning;
- Identify key services (e.g. gas, electric) and equipment for isolation and the isolation points (where appropriate);
- Post-emergency event investigation activities; and
- Identify and define additional resources needed to respond and control the emergency (e.g. emergency response material, personnel, services).

4.4.3. The emergency response control measures / arrangement will be identified in the risk assessment (Step 2). However, the following emergency response arrangements will be set out in the ERPs, where relevant, but not limited to:

- Raising the alarm;
- First response actions;
- Alert levels, escalation and reporting lines;
- Activation of the ERT (first aiders, fire response team, spill response team, etc.);
- Activation of the ERP;
- Internal and external notification and communication;
- Communication cascade tree (phone cascade, electronic and paper messages);
- List of key personnel (internal and external) and emergency contact information;
- List of key emergency response resources and locations;
- Onsite Emergency Control Centre (ECC) and alternate ECC;
- Emergency access points;
- Site plan showing location of:

  - Alarm activation points;
  - Emergency resources (first aid, firefighting equipment, spill kits, etc.)
  - ECC and alternate ECC;
  - Emergency access/egress points;
  - Key services/equipment isolation points; and
  - Hazardous material storage.

- Site evacuation (including medical evacuations), emergency escape routes and assembly (muster) points;

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 19 of 30

- Protection of vital record protocols;
- External emergency services / security protocols, muster points and assembly areas;
- Emergency equipment (e.g. firefighting equipment, lifesaving and rescue equipment);
- Search and rescue teams;
- Operations shutdown;
- Locking of equipment;
- Control of energy sources;
- Location of main valves and main switches;
- Dangerous goods and hazardous materials;
- Emergency communication protocol;
- Site re-integration (recovery);
- Post-emergency event investigation protocols;
- Internal notifications / reporting tools;
- Lessons learned review processes including management of the implementation of recommendations from this process; and
- Emergency response training and practice drills.

4.5 STEP 4 - IMPLEMENT THE ERP

4.5.1. Implementation must go beyond exercising the plan during an emergency. All parties must act on the recommendations made, the plan must be integrated into construction and operations, employees must be trained, and the plan, tested, evaluated and refined on an ongoing basis. Emergency planning must become part of the corporate culture, and as such the PIU needs to build awareness; educate and train personnel; test procedures; involve all levels of management, all departments involved in the Project and the community in the planning process; and make emergency management part of what personnel do on a day-to-day basis. Table 4-2 describes the key management controls that facilitate this process.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 20 of 30

Table 4-2 - Key Management Controls

No.	Topic/ Aspects	Applicability / Activity	Control Description	Responsible Parties	Means of verification
1	Hazard Identification and Context	Construction Operation	Hazard and risk identification process in place and updated every 6 months during construction and annually during operation. Emergency event identification process informed by hazards and risks identified at a functional level, including safety, environment and communities' risks. The risk identification and assessment will be undertaken for activities related to the Project alignment, associated facilities, transport routes and other off-site infrastructure. Risk Assessment procedures will be used to inform the hazard and risk identification process. The risk evaluation approach in Section 4.3 will be used to categorise the risk or emergency event.	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD EMT during operation.	Hazard and risk register developed and informs risk mitigations detailed in implementing ERPs. This is to be approved by PIU prior to construction, and TCDD Project Manager prior to operation.
2	Emergency Response Planning	Construction Operation	ERP in place for emergency events along the Project alignment and site-based activities, including off-site activities (e.g. transport of materials). The ERP will be supported by the Risk Assessment and will include: ■ SHE Management System; ■ Safety Reports; and ■ Emergency response plans / procedures.	Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD Transport's EMT during operation.	Construction ERP approved by the PIU H&S Specialist and PIU Environmental / Biodiversity Specialist prior to construction. Operation ERP approved by the TCDD Transport Project Manager prior to operation.
			The ERP identifies the communities that may be affected by an emergency event. AYGM PIU / TCDD Transport CLOs	Supervision Contract Manager, Contractor's	ERPs

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 21 of 30

No.	Topic/ Aspects	Applicability / Activity	Control Description	Responsible Parties	Means of verification
			will inform affected communities of potential hazards in a culturally appropriate manner and disclose emergency preparedness and response activities to affected communities. In the event that the local community identifies an emergency before the Contractor, local communities will be able to report any emergency events through a number of mechanisms, including incident reporting hotline set-up and communicated by the Contractor, the established grievance mechanism (as described in the **Stakeholder Engagement Plan)** or through the Project CLOs. AYGM PIU / TCDD Transport Environment and Social Manager will ensure that local governments and mukhtars, local emergency services and local community representatives are engaged with during the development of ERPs. The ERPs will explain how potentially affected communities and local authorities will be informed of any emergency events in a timely manner and will be involved in testing Emergency Response measures.	Emergency Manager and Contractor's EMT during construction. TCDD Transport Health and Safety Lead and TCDD Transport Environment and Social Manager during operation.	SEP Records of Meetings
			The ERP will include procedures to cover loss of containment of hazardous materials, fire, explosion, etc. AYGM, TCDD, Contractors and TCDD Transport will inform affected communities of potential off-site emergency events in a culturally appropriate manner. Off-site emergency response measures will be tested with potentially affected communities and local authorities. In the event of an emergency event affecting off-site receptors, the affected community and local authorities will be informed in a timely manner.	PIU H&S Specialist, PIU Environmental / Biodiversity Specialist, PIU CLO, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Operation Project Manager, TCDD Transport Emergency Manager and TCDD	ERPs Health, Safety and Security Plan

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 22 of 30

No.	Topic/ Aspects	Applicability / Activity	Control Description	Responsible Parties	Means of verification
				Transport EMT during operation.	
			The ERP will be reviewed after an emergency event or every 6 months during construction and annually during operation, if an emergency has not occurred, and updated based on lessons learnt if required.	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD Transport's EMT during operation.	Evidence of ERPs review and update, in ESHS report to PIU and lenders, every 6 months during construction, and annually during operation.
			AYGM PIU / TCDD Transport H&S Specialist will assess the management capacity and technical resources of key local authorities, municipality fire teams, AFAD (Disaster and Emergency Management Authority), Provincial directorates, hospitals etc. on a regular (every six months during construction and annually during operation) basis and update the construction / operation ERP accordingly as required. AYGM PIU and their Contractor during construction, and TCDD Transport during operation, will investigate signing Memorandums of Understanding (MoUs)/protocols related to ERP / Procedure cooperation with the key authorities and will include them in the updated ERP / Procedure. AYGM PIU / TCDD Transport will assess the need for capacity building for local governorships / municipalities and emergency services. If local governorships / municipalities and emergency services are found to have little or no capacity to respond effectively, AYGM PIU / TCDD Transport will play an active role in preparing for and responding to emergencies associated with the Project and provide adequate evidence to demonstrate capacity to	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD Transport EMT during operation.	Records of meetings with local authorities and emergency services. Signed MoUs.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 23 of 30

No.	Topic/ Aspects	Applicability / Activity	Control Description	Responsible Parties	Means of verification
			respond to reasonably predictable incidents, either directly or indirectly. The ERP will define the agreed roles and responsibilities of external organisations, where present.		
3	Training	Construction Operation	The construction and operation ERTs will be appropriately trained to deal with anticipated potential emergency events. Training will include practical skills training and exercises. The ERT will undertake periodic desktop and full-scale exercises. AYGM PIU / TCDD Transport will involve local authorities, local emergency services and local community representatives in emergency response exercises, as appropriate.	Supervision Contract Manager and Contractor's Emergency Manager during construction. TCDD Transport Environment and Social Manager during operation.	Training records demonstrating that ERT and EMT members have received initial and annual refresher training on the ERPs to maintain familiarisation and competency.
4	Training and site induction	Construction Operation	All employees, contractors, sub-contractors and visitors will be introduced to and instructed on how to: ■ Recognise and respond to an emergency alarm; ■ Raise the alarm if an emergency event is observed; and ■ Respond to spills. Area specific inductions and toolbox talks will be given to individuals working in high risk activity areas.	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD EMT during operation.	Training records for personnel.
5	Incident Reporting	Notification and investigation of an Emergency Event	Procedures in place to: ■ Record emergency event; ■ Investigate emergency event; ■ Analyse the impact(s) and the potential risk of a future emergency event; ■ Communicate emergency event lessons to relevant people/groups as appropriate; and ■ Manage corrective actions to prevent reoccurrence.	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Operation Project Manager, TCDD Emergency Manager	Review emergency event reports and emergency event investigations.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 24 of 30

No.	Topic/ Aspects	Applicability / Activity	Control Description	Responsible Parties	Means of verification
				and TCDD Transport EMT during operation.	
6	Emergency Response Plan / Procedure Reviews	Following an Emergency Event	Following activation of the ERT, recommendations for changes are to be submitted to the PIU Manager / PIU H&S Specialist and TCDD H&S Specialist depending on the Project phase for review and inclusion in the ERP as appropriate.	Supervision Contract Manager, Contactor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD EMT during operation.	As applicable, evidence of recommendations for change submitted to PIU H&S Specialist during construction and TCDD Transport H&S Specialist during operation.
7	Emergency Response Equipment	Construction Operation	Emergency response equipment to be inspected, maintained and tested in accordance with legal requirements and manufacturer's recommendations.	Supervision Contract Manager, Contractor's Emergency Manager and Contractor's EMT during construction. TCDD Transport Emergency Manager and TCDD Transport's EMT during operation.	Inspection, maintenance and testing records
8	Safe Disposal of Materials	Following an Emergency Event	Equipment and materials that need to be disposed of as a consequence of the emergency event will be disposed of in accordance with regulatory requirements.	Supervision Contract Manager and Contractor's Environmental Engineer during construction. TCDD Transport Environment and Social Manager during operation.	Review of records

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 25 of 30

EMERGENCY RECOVERY

4.5.2. When an emergency event is over, the recovery phase starts in which normal working is resumed.

COMMUNICATION

4.5.3. In case of emergencies, communication will be by use of mobile phones where the mobile signal is available, or where there is no mobile coverage satellite phones or radios will be provided. A map showing mobile coverage and dead spots along the Project alignment should be maintained by the PIU H&S Specialist and the Contractor H&S Lead and included within the ERP. At work sites, the onsite emergency responders from the ERT, ERT leader, Incident Controller and Emergency Manager will be provided with two-way radios (with designated channels for use in an emergency).

4.5.4. Emergency communication will flow from individual Emergency Responders from the ERT, to ERT Leader, to Incident Controller, to Emergency Manager, and back down the chain of command, using the designated emergency radio channel(s).

4.5.5. The number for notifying of an emergency event will be available in common shared areas (such as mess halls, office entrances, dormitories, recreation areas). The numbers will be shared during all employees' induction training.

4.5.6. In the event of any emergency event involving the Project (including any operation with a sub-contractor) where the media gets involved, the Crisis Management Committee will have primacy in media response during the construction and operation phase, respectively.

4.5.7. To achieve this, the PIU and TCDD Transport must:

- Provide the Emergency Manager with prepared holding statements to use with media at the scene;
- Communicate effectively with all internal and external audiences (staff, political, media, shareholders, suppliers, third party service providers, authorities, regulators etc);
- Maintain proactive and effective relations with the media;
- Keep up to date with public perception of the Project; and
- Assign roles and responsibilities to employees in terms of communication in the event of an emergency.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 26 of 30

5 MONITORING

5.1 OVERVIEW OF MONITORING REQUIREMENTS

5.1.1. The monitoring measures that are to be implemented during the construction and operational phases to assess compliance with Project standards are described in this section.

5.1.2. In the event that monitoring identified non-conformance with Project standards, these will be investigated, and appropriate corrective actions identified.

5.1.3. On completion of both emergency event and training exercises where the EMT and/or ERT have been mobilised, the personnel involved shall be debriefed and a report compiled to identify where the response functioned as planned and any areas for improvement.

5.1.4. Emergency event investigation shall be initiated in line with the Incident Reporting and Investigation Procedure specified in the ESMP and a report will be compiled. For some emergency events, there may be investigations undertaken by external authorities, and the PIU / TCDD Transport will co-operate with these authorities as required.

5.1.5. On completion of these processes 'Lessons Learned' from the emergency event may be circulated internally where appropriate.

5.2 KEY PERFORMANCE INDICATORS

5.2.1. **Table 5-1** summarises the key performance indicators (KPIs) and associated key monitoring actions that can be used to assess the progress and effectiveness of proposed mitigation.

Table 5-1 - Key Performance Indicators and Monitoring Measures

No.	KPI	Target	Monitoring Measure
1	Percentage of ERT team members trained.	100%	See verification column of Table 4-2.
2	Percentage of emergency management team trained in the ERP.	100%	See verification column Table 4-2.
3	Schedule of pre-planned emergency response training exercises in place for at least the next 12-month period.	In place	-
3	Percentage of pre-planned emergency response exercises carried out in the preceding 12-month period.	100%	See verification column of Table 4-2.
4	Percentage of emergency response equipment inspected/maintained/tested by original due date, by current month, and the preceding 12-month period.	100%	-
5	Number of non-compliances related to emergency preparedness and response procedures in current month and rolling 12-month period.	Minimise and target 0 per year.	See verification column of Table 4-2.
6	Percentage of accidents and incidents that have triggered the ERP in the current month and the preceding 12-month period.	Minimise and target 0 per year.	Incident reporting in monthly ESHS reports to Lenders.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 27 of 30

6 EMERGENCY RESPONSE TRAINING

6.1.1. Emergency preparedness and response training requirements shall be identified at the outset (e.g. using a Health Safety and Environment (HSE) Training Matrix), before construction works commence, and the matrix and a training plan developed for inclusion in the **Health, Safety and Security Plan**. The ERP will reference the appropriate section of the **Health, Safety and Security Plan** where emergency preparedness and response training is covered. The training will be reviewed on an annual basis.

6.1.2. A schedule of pre-planned periodic training will be developed and implemented before construction commences, to ensure the preparedness of the Contractor's Emergency Manager, Contractor's EMT and Contractor's ERT. This training will be described in the HSE Training Matrix and the training plan, included in the **Health, Safety and Security Plan**. The ERP will reference the appropriate section of the **Health, Safety and Security Plan** covering the matrix and a training plan. Training shall be delivered by a combination of external training organisations competent in the training topic and internally by the AYGM PIU Health and Safety Specialist and Contractor's Health and Safety Lead during the construction and TCDD Transport's Health and Safety Lead during operation. Various delivery methods shall be used as described below.

Table 6-1 - Example of Training Delivery Methods

Training Type	Description
Training Session	Training for individuals or teams designed to educate, enhance or increase any or a combination of the following: knowledge, skills, understanding of emergency response, their roles and responsibilities.
Notification/Communications Exercise	Exercise designed to validate communications or notification procedures between frontline ERT, the ERT Leader, Incident Controller, Emergency Manager and/or with PIU / TCDD Transport Crisis Management Committee.
Table top Exercise	Team members will be invited to talk through responses to an incident, in the roles that they would have. This is done without simulation or time pressure to allow for clarification and discussion.
Simulation Exercise / Practical Exercise	For the exercise, an identified event shall be used to develop an emergency scenario. Simulation exercises can involve one or more of the following emergency response levels: ■ Incident response (ERT, ERT Leader and Incident Controller); ■ EMT; ■ Crisis Management Committee; and ■ External Agencies. Those involved will respond to scripted interventions which will either take place on a timed basis and/or on the judgement of the leader of the simulation exercise designated by the Emergency Manager on how the participants are responding to the interventions.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 28 of 30

6.1.3. Training will be used to communicate business continuity and emergency response and planning to all personnel. An annual training exercise programme will be developed each year. The programme will be realistic to test response plans and procedures. As a minimum, desktop exercises will take place annually with a full-scale exercise taking place at least every two years.

6.1.4. Individual employees will receive emergency response training at the following stages in their employment:

- Induction; and
- Job / activity-specific orientation, e.g. for construction crews, and ERTs.

6.1.5. All training will be recorded, and records retained for at least 5 years.

6.2 INDUCTION TRAINING

6.2.1. All employees who will be working in a Project location shall be provided with basic training in:

- The sound of the emergency alarm(s);
- Raising the emergency alarm; and
- How to respond to hearing the emergency alarm.

6.3 JOB / ACTIVITY - SPECIFIC TRAINING

HAZARDOUS SUBSTANCES

6.3.1. Training will be developed in order to provide relevant personnel with general information and awareness relating to the hazards and control measures relevant to those hazardous substances used in the Project.

6.3.2. Any person who is involved with the handling, use or management of hazardous substances will complete the training for those hazardous materials involved in their job.

6.3.3. Specific training on hazardous spill containment will be completed by those handling and/or using hazardous substances, prior to commencing any activities with this risk.

EMERGENCY RESPONDERS

6.3.4. ERT members will be appropriately trained in the equipment and techniques they may have to use in dealing with the emergency events to level of competency defined in the HSE training matrix.

6.3.5. ERT members will receive initial and periodic refresher training on the team's emergency response procedures to maintain familiarisation and competency.

6.3.6. The ERT members will undertake periodic drills and training with an emphasis on practical skills using a combination of onsite training and off-site training facilities. Training is based around a changing set of activities and is planned and managed on a dynamic basis.

EMERGENCY MANAGEMENT TEAM

6.3.7. Members of the EMT will receive initial and periodic refresher training on the ERP relevant to their areas of responsibility, to ensure the EMT personnel are aware of changes in the ERP.

6.3.8. Whenever there is a significant change in the ERP, a desktop training exercise will be undertaken by impacted roles.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
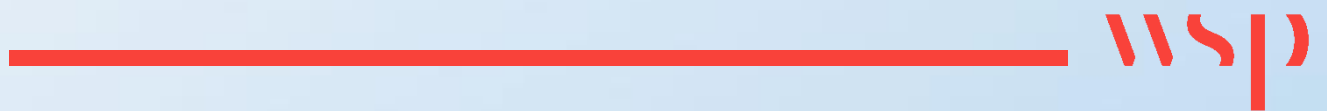APRIL 2021
Page 29 of 30

EMERGENCY EVACUATION DRILLS

6.3.9.   Personnel at a new work location must be shown where to gather in the event of an evacuation on their first day. Emergency evacuation drills for a location will be undertaken by all personnel within a week of mobilisation at a new work locations or construction compound. Thereafter, on at least an annual basis.

6.3.10.   Records will be maintained for each drill and report provided to AYGM PIU (construction) or TCDD Transport (operation) containing:

- Start date and time;
- Weather conditions;
- Who took part;
- Evacuation time (time from alarm being triggered to when last person accounted for at the assembly points); and
- Lessons learnt.

EMERGENCY EXERCISES

6.3.11.   Emergency exercises will be carried out at periodic intervals to test and validate the Project ERP, i.e. desktop exercises annually with full-scale exercises taking place at least every two years. Every exercise will have a pre-planned scenario and a leader designated by the Emergency Manager to facilitate and provide oversight of the exercise.

6.3.12.   The designated leader of the exercise will prepare a report and submit to the AYGM PIU (construction) or TCDD Transport (operation) within 5 working days following completion of the exercise. Lessons learnt will be recorded into an action tracking system to follow-up through to implementation.

HALKALI - CERKEZKOY HIGH SPEED RAILWAY
Project No.: 70069878 | Our Ref No.: 70069878
AYGM

PUBLIC | WSP
APRIL 2021
Page 30 of 30

Appendix A

HAZARD IDENTIFICATION TEMPLATE

Table A-1 – Hazard Identification

Hazard Type	Local Hazard Details
Natural Hazards	
Earthquakes	
Landslides	
Sink holes	
Groundwater flooding	
Extreme temperatures	
Storms	
Snow storms	
Thunderstorms	
Fog	
Extreme rainfall	
Severe space weather	
Solar flares	
Wildfires, forest fire, bush, brush and pasture	
Poor air quality	
Invasive plant outbreaks	
Technological or Manmade Hazards	
Industrial unrest	
Community unrest	
Displaced population	
Criminal, sabotage or arson attack	
Security emergency	
Civil / political disturbance	
Rail accidents	
Road accidents (or road obstruction / closure)	

Hazard Type	Local Hazard Details
Waterway accidents	
Aviation accidents	
Spillage of hazardous or potentially hazards materials (on or off site)	
Access road closure	
Incident classification	
Recovery from confined space and excavations	
Air Pollution Accidents	
Land Pollution Accidents	
Water Pollution Accidents	
Utilities failures	
Unexploded ordnance	
Malicious attacks - chemical, biological, radiological and nuclear	
Malicious cyber attack	
Interruption to or failure of telecommunications systems	
Failure of significant computer systems	
Bridge failure	
Flood defence failure	
Property or bridge demolition accident	
Tunnel failure	
Fire (contained and conflagration)	
Explosion (accident or terrorist)	

Appendix B

RISK ASSESSMENT TEMPLATE

wsp

Table B-1 – Risk Assessment Example

Hazard Type	Risk	Initial Consequence Rating	Measures to Avoid Emergency or Existing Emergency Control Measures	Final Consequence Rating	Additional Action Required

wsp.com