SAKARYA GAS FIELD DEVELOPMENT PROJECT - ESIA

CONTRACT NO: SC26-PRJ-PU-CNT-00179

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

Chapter 8 Offshore Risk of Accidental Releases

COMPANY Doc. No. SC26-OTC-PRJ-EN-REP-000019

CONTRACTOR Doc. No. 21497091

01	28/09/2022	Issued for approval	WSP Golder	Yazgı Akın	Project Management	
00	18/07/2022	Issued for review	WSP Golder	Yazgı Akın	Project Management	
Rev. N°	**Date**	**Issue Type**	**Prepared by**	**Checked by**	**Approved by**	**COMPANY Acceptance Code**

REVISION TRACKING TABLE		
Rev. N°	**Modification Description**	**Modified Page No.**
00	Initial draft	N/A
01	Issued for approval	N/A

Information Classification

Code	Description of Information Classification
PUBLIC	Information and data that may be shared without restrictions because it is unlikely to result in any harm if disclosed to outside parties. Permission to actually release information to the public must be obtained separately through External Affairs
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8.0 OFFSHORE RISK OF ACCIDENTAL RELEASES

8.1 Introduction

Accidental releases may include unplanned releases of hydrocarbons, chemicals and wastes during construction, operation, and decommissioning phases of the Project. Accidental releases may result from several sources including:

- Spillage or discharge of Potentially Hazardous Substances from vessel (including vessel collision).
- Gas Leakages and Fire.
- Chemical Leakage from pipeline and cable.

Accidental hydrocarbon and other chemical releases have the potential to impact various receptors in the marine and coastal environment including marine flora and fauna, especially seabirds and marine mammals, marine habitats, and ecosystem services such as fisheries.

As concerns the onshore risks, indications and comments about the most appropriate technical solutions are included in the Chapter 3 (Project Description) and Chapter 4 (Alternative Analysis).

8.2 Regulation and Guidance

The Project is subject to applicable Turkish Regulatory requirements and to those of international conventions ratified by Turkey. It will also follow good international industry practice and meet the requirements of International Finance Corporation (IFC).

Key legislation relating to offshore hydrocarbon spill risk assessment and response planning includes:

- Law Pertaining to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances (No. 5312), Official Gazette date/no: 11.03.2005/25752.
- Regulation on Sea and Inland Waters Hydrographic Survey, Official Gazette date/no: 09.08.2016/29796.
- Implementation Regulation on Law Pertaining to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances, Official Gazette date/no: 21.10.2006/26326.
- Regulation on Prevention of Major Industrial Accidents and Mitigation of Resulting Impacts, Official Gazette Date/No: 02.03.2019/30702.
- Communiqué Concerning the Major Accident Scenario Document to be issued for Major Industrial Accidents, Official Gazette date/no: 30.06.2020/31171.
- Insurance Tariff and Instruction on Obligatory Financial Liability for Sea Pollution of Coastal Facilities, Official Gazette date/no: 25.04.2018/30402.
- IFC – Environmental, Health, and Safety Guidelines.
- IFC – Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development.
- International Convention for the Prevention of Pollution from Ships (MARPOL-73 Convention), as modified by the Protocol (MARPOL-78 Protocol) (1983) (Ratification date: 24 June 1990). This includes: Annex I,

Annex II and Annex V (Ratification date: 24 June 1990); Annex III and Annex IV (Ratification date: 14 January 2015); MARPOL 1997 Protocol – Annex VI (Ratification date: 4 February 2014);

- The Convention on the Protection of the Black Sea against Pollution (Bucharest Convention), (Ratification Date: 21 April 1992).
- International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM, 2004) (Ratification date: 14 October 2014).
- International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKERS, 2001) (Ratification date: 26 February 2013).
- International Convention on the Establishment of an International Fund for Compensation of Oil Pollution (FUND 1992) (Ratification date: 17 August 2002).
- The 2003 Protocol to the International Convention on the Establishment of an International Fund for Compensation of Oil Pollution (FUND 2003) (Ratification date: 25 November 2011).
- International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC 1990) (Ratification date: 11 June 2003).
- Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS 2000), (Ratification date: 27 June 2013).
- International Convention on Civil Liability for Oil Pollution Damage (CLC 1992) (Ratification date: 27 July 2001).
- International Convention on Salvage (SALVAGE 1989), (Ratification date: 24 May 2014).

The risk analysis study of the Project for the offshore and coastal transition section was conducted in comply with the Law Pertaining to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances. This Law and its related Regulation obliges coastal facilities, including pipelines, to prepare a Risk Assessment and Emergency Response Plan. In this context, since there are coastal facilities in the Project, the Emergency Response Plan has been prepared by an organization authorized by the Ministry of Environment and Urbanization.

The Emergency Response Plan includes a spill response plan. According to the IFC – Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development (2015), a spill response plan should include:

"Oil spill trajectory modelling supported by internationally recognized models (in accordance with the relevant regulatory jurisdiction prescriptions, if any), for the prediction of oil fate and relevant environmental impacts for a number of spill simulations (including worst-case scenario, such as blowout from an oil well), with the ability to input local current and wind data."

8.3 Spill Spreading Modelling

The spill spreading modelling study was carried out by Prof. Dr. Ersan Başar from Black Sea Technical University, Faculty of Sea Sciences, Department of Maritime Transportation Management Engineering in July 2021. This study includes the spatial and temporal spill simulation of the oil spill within the scope of the Sakarya Gas Field Development Project and within the scope of the Emergency Response Plan for the TPAO Sakarya Gas Field Development Project Coastal Logistics Center at the Filyos port located at the Zonguldak Port Authority. In the study, in addition to the meteorological and oceanographic data obtained, a current model in the region was created and provided as a basis for the simulation model. In the simulations, oil spill scenarios have been created for different fuel types on calm and windy weather conditions during the berthing of the largest ship.

8.3.1 Offshore Oil Dispersion

Determining the surface runoff is one of the most important variables to consider in finding the eventual oil spill after ship accidents. Princeton Ocean Model (POM) was used to determine the current. The resulting discharge model was applied to the General NOAA Oil Modeling Environment (GNOME™) model prepared by the National Oceanography and Atmospheric Administration (NOAA). The shapes that the spill will take according to time and changing wind direction and intensity have been determined. The obtained temporal and spatial oil spill models have been examined and help to determine the emergency response method and equipment to be applied.

Ship accidents in open sea are hypnotized in 2 places (**Figure *8-1***).

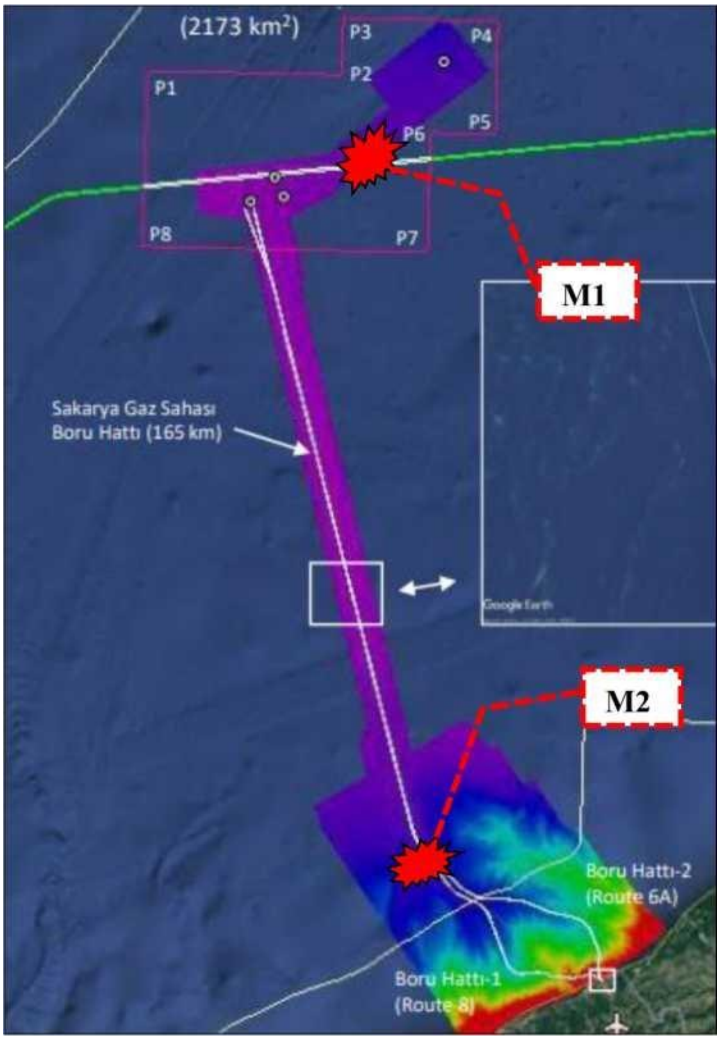

Figure 8-1: Accident points where simulations were made in open sea

The coordinates of the estimated accident sites in the open sea are reported in **Table 8-1.**

Table 8-1: Coordinates where scenarios in open sea are hypothesized.

Scenarios	Latitude	Longitude
M1	42° 56' 10" N	31° 25' 24" E
M2	41° 47' 34" N	31° 38' 44" E

One of the most important boundary conditions in the simulation is the direction and intensity of the wind. The dominant wind directions in the open sea are Northeast (NE).

In the simulation studies, the intensity of the wind in the NE direction was taken as 5m/sec. In addition, wind was taken in the Northwest (NW) direction to analyse the spill in the NW wind direction. The main criterion in choosing this second direction is the line in which the coast is closest, and it is aimed to simulate the highest level of risk. Table 8-2 shows the scenarios of the simulations according to the wind direction and intensity.

Table 8-2: Scenarios according to wind direction and intensities in open sea.

Scenarios	Wind Direction	Wind Intensity m/sec
R1	NE	5
R2	NW	5

It is known that there is Fuel Oil No. 4 (F/O No. 4) and/or diesel in the fuel tanks of the ships arriving within the port area. While creating the scenarios, the average amount of fuel that can be spilled was determined by calculating the average fuel tank capacity according to the sizes of the incoming ships. Scenarios have been devised on 10MT (Metric Tonne) for diesel (T1), 100MT for diesel (T2), 1000 MT for F/O No. 4 (T3) and 100MT for F/O No. 4 (T4). Table 8-3 shows the type and amount of fuel spilled after the accident.

Table 8-3 : Fuel types and spillage scenarios.

Scenarios	Oil Type	Amount MT (Metric Tonne)
T1	Diesel	10
T2	Diesel	100
T3	FuelOil #4	1000
T4	FuelOil #4	100

The scenarios have been planned as shown in Table 8-4.

Table 8-4: Oil Spill Scenarios

Scenarios	Location M		Wind R		Fuel Type			
	M1	M2	R1	R2	T1	T2	T3	T4
S1	V		V			V		
S2	V		V				V	

Scenarios	Location M		Wind R		Fuel Type			
	M1	M2	R1	R2	T1	T2	T3	T4
S3	V			V		V		
S4	V			V			V	
S5		V	V		V			
S6		V	V					V
S7		V		V	V			
S8		V		V				V

According to the modelling study, the findings and result of 8 different scenarios are shown in Table 8-5.

Table 8-5: Scenario in open sea – Results

Scenario	Results
S1	The spilled fuel first moved to the south-southwest (SSW) direction, after the 12th hour, it is understood that it turned toward to the northeast. It has been determined that the fuel, which has changed direction due to the increase in the intensity of the flow, has made its first contact with the shore at the 24th hour and on the 36th hour 30.6% of it has evaporated with the remaining still being around the shore.
S2	The spilt fuel first moved to the SW direction, after the 12th hour, it is understood that it turned movement to the northeast. It has been determined that the fuel, which has changed direction due to the increase in the intensity of the flow, has made its first contact with the shore at the 22nd hour and on the 36th hour 37.6% of it has evaporated with the remaining still being around the shore.
S3	It has been observed that 28% of the fuel has evaporated and the other part remains in contact with the shore. When the wind coming from the NW direction is combined with the flow effect, it has been determined that the speed of the fuel to reach the shore increases.
S4	It has been observed that 30% of the fuel has evaporated and the other part remains in contact with the shore. When the wind coming from the NW direction is combined with the flow effect, it has been determined that the speed of the fuel to reach the shore increases.
S5	It has been understood that 24% of the fuel has evaporated to the 24th hour and the rest remains in contact with the shore.
S6	It has been understood that 26.4% of the fuel has evaporated and the rest remains in contact with the shore. It has been determined that the fuel has spread along the coastline.

Scenario	Results
S7	It has been understood that 21.4% of the fuel has evaporated and the rest remains in contact with the shore.
S8	It was understood that the fuel met the coast with the effect of the wind.

Response strategies after fuel spillage offshore

According to the modelling study, the fuel spill simulation in the open sea has in the wind direction and important determining factor. Therefore, the meteorological data should be examined carefully in the fuel spills that might occur.

In the simulations, it is understood that the fuel moves towards the shore in the dominant wind directions. In the NE winds, the fuel moves to the SW in the first hours and then it is observed that it is directed to the southeast (SE). When the fuel spill was examined, it was observed that in the spills formed in the M1 region, it met with the land in about 20 hours, and in the M2 region, it was observed that there was contact with the coast within 6 hours.

It is very important to intervene quickly in case of a spilled fuel accident. It will be useful to control the spread at the first moments by using a response boom.

The materials and equipment to be kept ready to be used in oil spills should be in a place where they can be easily accessed. It should be in an easily usable structure to be quickly spread out to the sea, when necessary, especially the booms, and it is known that the compatibility of the joints of the booms is important in terms of extending or shortening the boom distance. A boat with sufficient engine and capacity power to carry or tow the booms should always be at the ready to operate when requested.

8.3.2 Oil Dispersion in the coastal area – port

Determining the surface runoff is one of the most important variables to find the oil spill that may occur after ship accidents. The POM was used to determine the current. The resulting discharge model was applied to the NOAA Oil Modeling Environment (GNOME™) model prepared by the NOAA. The shapes that the spill will take according to time and changing wind direction and intensity have been determined. The obtained temporal and spatial oil spill models have been examined and they will be used to determine the most efficient emergency response method and equipment to use.

The layout of the port is shown in Figure 8-2. Accident scenarios within the port area are operated in 2 places. M1 is positioned for the ships entering the port; M2 is designed for the spills that may occur during docking. The coordinates of these points are given in Table 8-6.

Figure 8-2: Accident points where simulations have been hypothesized (coastal area-port).

Table 8-6: Coordinates where scenarios in the coastal area – port are hypothesized.

Scenarios	Latitude	Longitude
M1	41° 35' 31" N	32° 03' 52" E
M2	41° 35' 13" N	32° 04' 04" E

The dominant wind directions of the region are East Southeast (ESE). In the simulation, the annual average effective wind force was taken as 2 m/sec in the ESE direction. Maximum wind is hypnotized as 20 m/sec in South Southeast (SSE) direction. Table 8-7 shows the scenarios of the simulations according to the wind direction and intensity. Wind directions were taken according to annual averages and their speeds were obtained in line with statistical data at appropriate values for simulation.

Table 8-7: Scenarios According to Wind Direction and Intensities

Scenarios	Wind Direction	Wind Intensity m/sec
R1	ESE	2
R2	SSE	20

It is known that there is F/O No. 4 (F/O No. 4) and/or diesel in the fuel tanks of the ships arriving within the port area. While creating the scenarios, the average amount of fuel that can be spilled was determined by calculating the average fuel tank capacity according to the sizes of the incoming ships. The scenarios have been devised on 10mt for diesel (T1), 100mt for diesel (T2), 700 MT for F/O No. 4 (T3) and 75mt for F/O No. 4 (T4).

Table 8-8 shows the type and amount of fuel spilled after the accident.

Table 8-8: Fuel types and spillage scenarios.

Scenarios	Oil Type	Amount MT (Metric Tonne)
T1	Diesel	10
T2	Diesel	100
T3	FuelOil #4	700
T4	FuelOil #4	75

The scenarios have been planned as shown in Table 8-9.

Table 8-9: Oil spill scenarios.

Scenarios	Location M		Wind R		Fuel Type			
	M1	M2	R1	R2	T1	T2	T3	T4
S1	V		V			V		
S2	V		V				V	
S3	V			V				V
S4	V			V	V			
S5	V			V			V	
S6		V	V		V			
S7		V	V			V		
S8		V		V			V	
S9		V		V				V
S10		V		V		V		

According to the modelling study, the findings, and results of the scenarios for accidents into the port are shown in Table 8-10.

Table 8-10: Accident into the port – Scenario results

Scenario	Results
S1	In the first 30 minutes, fuel began to spread in the south-east direction. Meanwhile, it was seen that 0.5% of the water evaporated and the other part started to spread. The fuel has not met the shore in the 30th minute. Modelling result shows the status of the fuel in 40th minutes. In the meantime, it has been determined that there is contact with the coast. Modelling result shows the spill of the fuel in the second hour. At this moment, it stopped all fuel dispersion. At the end of the 6th hour, it was determined that 13.3% of the fuel evaporated and the rest remains in contact with the outer part of the dock.

Scenario	Results
S2	It has been determined that the fuel subjected to the flow effect has met the first pier in the 20th minute. Due to the high amount of fuel, it has been observed that the fuel exhibits an expanding spill. The fuel has come into contact with the outer part of the pier with 14.2% of it evaporated.
S3	The fuel moved in the northwest direction with the effect of the wind with the advancement of time. In the first 20 minutes, all the fuel started to spread in the water, while it was understood that 0.8% of the fuel evaporated and the rest continued to spill. After 6 hours, it was determined that 10% of the fuel evaporated and the rest moved towards the open sea. When the fuel exposed to the wind effect is combined with the flow effect, it has been determined that it is dragged out of the port area within the first 20 minutes.
S4	Diesel, which was exposed to high wind force, started to move in the north-northwest direction by expanding. With the advancement of time, it has been observed that the fuel is dragged towards the open sea. In the first 20 minutes of the spill, it was determined that 1% of it evaporated rapidly. At the end of the 6th hour, it was understood that 11% of the fuel evaporated and the rest was dragged to the open sea.
S5	In the first 30 minutes, fuel began to spread in the north-northwest direction. Meanwhile, it was seen that 0.9% of the water evaporated and the other part started to spread. In 60 minutes, it has been determined that 9% of them have met the piers in the pier and the pier. In the 6th hour, it was observed that 10% of the fuel evaporated, 73% was dragged to the open sea and the rest was dragged in the port touching the coast.
S6	In the diesel terminal area, which was exposed to low wind force, it started to move in the west direction with its effect. With the advancement of time, it has been observed that the fuel meets the dock. In the first 30 minutes of the spill, it was determined that 0.7% of it evaporated rapidly and 6% of it met the pier. Then, in the 6th hour, it was understood that 90% of the fuel was in contact with the shore and the rest evaporated. It has been observed that the fuel coming out of the accident point meets the dock quickly and does not spread widely. At the same time, it was understood that the fuel was trapped in the port where it did not go out of the port area.
S7	The fuel moved in the northwest direction with the effect of the high wind with the advancement of time. In the first 30 minutes, all the fuel started to spread in the water, while it was understood that 1% of the fuel evaporated, 9% met the shore and the rest continued to spill. After 6 hours, it was determined that 11.9% of the fuel evaporated and the rest met the south dock.
S8	In the first 30 minutes of the spill, it was determined that 1.9% of it evaporated rapidly. Later, it has been determined that 11.8% of the fuel has evaporated and the rest has met the shore. It was understood that the fuel remained in the port. It has been determined that fuel has been collected especially in the northern inner docks of the port.

Scenario	Results
S9	Due to the high wind speed and the close spill point to the dock, 6.3% of the fuel has met the shore within the first 30 minutes. Due to the high wind, the fuel was trapped on the dock within 1 hour and remained at a certain point. It has been observed that it does not spread due to wind pressure.
S10	It is understood that it is spilt with the effect of fuel flow and wind. The fuel has met the shore in the 30^{th} minute. The fuel was completely in contact with the shore within 1 hour and its spread stopped. During the spill, it was determined that 6.8% of it evaporated within 1 hour and the rest met the shore.

Response Strategies After Fuel Spillage in The Coastal Area-Port

According to the modelling study, the fuel spill simulation in the open sea has in the wind direction and important determining factor. Therefore, the meteorological data should be examined carefully in the fuel spills that might occur.

In the simulations, it is understood that the fuel is moved and amassed in the dock area in the dominant wind directions, and it touches the shore in this area. It has been observed that, spills that occur remain in the inner parts of the port dock. In the spills at the edge of the pier, it was determined that the fuel moved intensely towards the open sea. It has been observed that the fuel reaches the shore quickly when the wind intensity is high.

It is very important to intervene quickly on the fuel spilled over after the accident. Using a response boom is an appropriate method to prevent the dispersion in the port.

The materials and equipment to be kept ready to be used in oil spills should be in a place where they can be easily accessed at the terminal site and where they do not cause any harm to the sea vehicles. It should be in an easily accessible structure to be quickly spread out to the sea, when necessary, especially the booms, and it is known that the compatibility of the joints of the booms is important in terms of extending or shortening the boom distance. A boat to be used in emergency response with machine and capacity power that can tow the booms must also be ready to operate when requested.

8.4 Accidental Releases

Accidental releases may result from several sources including:

- Spillage or discharge of Potentially Hazardous Substances from vessel.
  - Vessel collisions resulting in release of vessel fuel to sea.
  - Spillage or Discharge of Potentially Hazardous Substances other than Fuel/Oil from Vessel.
- Gas leakages and Fire.
- Chemical Leakage from the submarine cable and pipelines.

<u>Spillage or discharge of Potentially Hazardous Substances from vessels:</u> The main chemicals onboard include fuel, lubrication oil and hydraulics for the maintenance of equipment and machines. Coating products, all

detergents, solvents, and hydro chemical products (chloride, corrosion inhibitor, oxygen cleaner, ethylene glycol, methanol, paint) are other types of chemicals, which can be found on vessels and are stored in barrels and/or bulk containers. In case of spillage of these chemicals into the sea, firstly, the source of the spillage must be isolated. Then, the spread of the spillage must be prevented by placing a sorbent barrier around the spillage depending on the size of the spilled chemicals.

To prevent hazards from the operations mentioned above, a safety cordon of 2 km is necessary around the vessels operating offshore and minimum 500 m around the vessels operating at the coastal transition zone during the operation of the vessels. The construction vessels will notify Turkish Naval Forces, Office of Navigation, Hydrography and Oceanography (ONHO) of their locations and working schedules and the sailors of the third-party vessels will be required to cruise from a distance designated for the Project construction vessels with announcements.

In addition, the actions to prevent these spills are:

- Ensuring that the operations are carried out in accordance with the MARPOL, Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention), and national regulations.
- All the contractors and operators working under the Project develop and efficiently implement Ship Oil Pollution Emergency Plans as per MARPOL 73/78 Convention and related guides for each vessel.
- Protection of chemicals onboard by keeping them inside packages in very small amounts so that they will not leak from the vessels.

<u>Gas Leakages and Fire:</u> The risk foreseen in the operating phase of the Project is natural gas leakage because of any possible damage on the submarine cable and pipelines. A natural gas leakage from a minor puncture or tear over the lines does not cause any danger over the sea surface. A wind at a minimum velocity easily disperses the natural gas which is lighter than the air to the atmosphere. Since natural gas will mix directly into the atmosphere, there is no risk of polluting the sea and it does not harm the marine species because it is not poisonous.

<u>Chemical Leakage from pipeline and cable:</u> Liquid chemicals will be transported in the submarine cable and pipelines during the operating phase of the Project. Chemical leakage may occur because of any possible damage to this line. The impact of these chemicals on the aquatic life and their behavior in the marine water are critical. The behavior of a substance poured into the sea changes during the first couple of hours after the contact with water. Being able to predict this behavior is one of the most important steps to develop an intervention strategy. Therefore, the behaviors of the chemicals will be evaluated according to SEBC-Standard European Behavior Classification principles and appropriate intervention methods will be determined.

The likelihood of the possible hazards from the operations mentioned above to damage the submarine cable and pipelines is very low but it exists, and such a situation may result in gas leakage from the damaged submarine cable and pipeline. Engineering design standards and quality assurance throughout construction, combined with the high external pressure above the pipeline at a water depth of 2200 m, it is extremely unlikely for such an incident to occur in an offshore pipeline.

In the coastal transition zone, the potential of gas leakage due to the low external pressure on the pipeline will be relatively high. However, such risks were considered, and the carrier line thicknesses were chosen to provide maximum safety during the Project design. In addition, this risk was considered as negligible since intervention can be made within a short time in the coastal transition zone. For a fire incident to impact the receivers, an ignition over the sea surface must jump onto a cruising vessel following a submarine cable and pipeline failure and gas leakage. The highest probability of such an incident occurring is that an object such as a container or the vessel itself causes an impact on the pipeline, as described above. Such an incident was considered negligible since it is not observed statistically either offshore or in the coastal regions.

The mitigating measures to be implemented to minimize the likelihood of any chemical spill/leakage and to minimize possible adverse effects potentially affected aquatic species and habitats include:

- In addition to the Emergency Response Plan, the number of personnel, quantity of materials and equipment required to be kept in the coastal facilities for preparedness and response, within the scope of Article 23 of the "Implementation Regulation of the Law on the Principles of Emergency Intervention and Compensation of Damages in Pollution of the Marine Environment with Petroleum and Other Harmful Substances" are determined based on the risk assessment and the tools, supplies, materials, and equipment to be used will be provided as per the national and internationally accepted standards. The employees will be provided with training on preparedness and response to oil and other harmful substances as well as equipment and materials to minimize the risk of accident during the construction and operation phases.
- Communiqué No. 2009/4 on the Election of the Companies/Institutions/Organizations that can be charged with Response in Emergencies in the Pollution of the Marine Environment with Petroleum and Other Harmful Substances, and the Working Procedures of the Companies/Institutions/Organizations and Coastal Facilities with Authorization Certificates states that service procurement or keeping the personnel, material, and equipment available on-site is mandatory for Level 1 risks. In addition, contract will be signed with the company/institution/organization authorized as per this Communiqué for the Level 2 or 3 risks identified and this contract will be kept in the site.
- As per Article 19 of Circular No. 2010/4 on “Procedures and Principles of Training Seminars and Practice Programs on Preparedness and Response to Pollution Caused by Petroleum and Other Harmful Substances”, coastal facility needs to fulfil the requirements of this Circular within latest six months following the date of approval of emergency response plans by the Ministry. Thus, facility personnel will receive their training from the companies authorized to hold emergency response training seminar and develop exercise program as per this Circular.
- As per Article 8 (Guarantees of financial liability) of the Law No. 5312 on the Principles of Emergency Intervention and Compensation of Damages in Pollution of the Marine Environment with Petroleum and Other Harmful Substances entered into force by being published in the Official Gazette No. 25762 on 11.03.2005, “Coastal facilities shall be obliged to take financial liability insurance against the damages under this Law. “Coastal Facilities Marine Pollution Compulsory Liability Insurance” will be taken out as per the statement “Coastal facilities that fail to comply with the requirement to take insurance shall not be allowed to operate” before the facility is put into service. As per Article 41 of the "Implementation Regulation of the Law on the Principles of Emergency Intervention and Compensation of Damages in Pollution of the Marine Environment with Petroleum and Other Harmful Substances, coastal facilities will be insured by the insurance companies designated by T.R. Ministry of Treasury and Finance since liability insurance against the damages specified under the Law is compulsory and the facilities must be insured by these companies.

The mitigating measures mentioned above will minimize the likelihood of an oil and other harmful substance spill/leakage therefore possible adverse effects on the aquatic life will have been mitigated.

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