Domain	EMERGENCY RESPONSE
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	43
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Abrud, 25.07.2006
RMGC internal unique code	MMGA_0143

Proposal

What plan has the company in place in case of dam failure?

Solution

According to legal provision in force [1], an *Emergency Preparedness and Spill Contingency Plan* has been established (Plan I, vol. 28) whose updated version will be attached to the answer as Annex 5.2.

An *Internal Emergency Plan* will be drawn up before starting operations, in accordance with **Government Decision no 95/2003** and **Ministerial Order no 467/2005** of the Ministry of Administration and Interior (M.A.I.).

The company will provide the necessary information for the drawing up, by the competent local authorities, of the *External Emergency Plan* (in accordance with **Government Decision no 95/2003 and Ministerial Order no 467/2005 of the M.A.I.**).

The proposed construction of the Corna Dam, intended to contain the tailings, is based on design criteria that comply with Romanian and international standards. These criteria are meant to ensure maximum safety levels during the construction, operational, closure and post-closure stages. They include flood control criteria, safety factors for slope stability and seismic design criteria etc.

Based on the criteria previously mentioned, the dam has been designed to withstand an earthquake measuring 8 on the Richter scale. No such event has ever occurred on the Romanian territory and it is hard to imagine the mechanism that could cause such an event in the future.

The main design elements that ensure the dam's increased safety include the following:

- the dam has been designed to retain water resulting from 2 consecutive PMFs;
- with each dam rise, a spillway will be constructed to discharge, in a controlled way, the excess water resulting from potential extreme events. This will help to prevent the erosion of the dam's downstream slopes;
- the rockfill starter dam has an impervious core and an embankment slope measuring 2H:1V downstream and 1.75H:1V upstream;
- the main dam – the Corna rockfill dam, of centerline construction and downstream slopes measuring 3H:1V;
- a drainage system at the bottom of the tailings management facility and a filter layer between the dam rockfill and tailings, to reduce humidity and consolidate the stored material;
- a monitoring system set up on the dam's crest or on its vicinity, to provide timely information regarding potential instability situations, excessive rise of the groundwater in the dam body, excessive increase of the water volume stored in the decant pond;
- implementation of a strict Quality Assurance program, during the entire construction period.

Under these circumstances, an accident resulting in dam failure is highly unlikely. However, hypothetical scenarios have been imagined, based on the assumption that the technical errors resulting from noncompliance with the construction methodology have led to dam failure. These scenarios represent the worst case scenarios that could be identified, taking into account the technical characteristics of the TMF. The scenarios are presented in detail in Chapter 7, the EIA Report, subchapter 6.4.3, pages 117-121).

Referred to subchapters 6.4.3.2 and 6.4.3.6 we like to mention that a new and much more precise and realistic simulation has been subsequently established based on the INCA Mine model, that considers the

dispersion, volatilisation and breakdown of cyanides during the downstream movement of the pollutant flow (Whitehead et al., 2006). The new study has been attached to the Report on Environmental Impact Assessment Study (Annex 5.1).

References:

[1]

- **The Emergency Governmental Ordinance no. 195 /2005** on environmental protection;
- **Law no. 107/1996**- Water Law, amended by **Law no. 310/2004** and Law no. 112/2006.
- **The Order no. 638/2005 of the Ministry of the Environment and Water Management** and **Order no. 420/SB/2005 of the Ministry of Administration and Interior** on the approval of the Regulation regarding the management of emergency situations caused by floods, hazardous meteorological events, accidents involving hydrotechnical structures and accidental pollutions and for the approval of the Framework for the purchase of materials and devices used for protection against floods, winter emergencies and accidental pollution;
- **Order no 278/1997 of MEWM** on the approval of the framework methodology for the drawing up of plans to prevent and fight accidental pollution caused by the use of potentially polluting water;
- **Government Decision no. 2288/2004** on the approval of the assignment of responsibilities undertaken by the ministries, other central institutions and non-governmental organizations regarding the prevention and management of emergency situations;
- **The Emergency Governmental Ordinance no 21/2004** on the national management system for emergency situations;
- **Order no 161/2006 of MEWM** on the approval of the standard regarding a classification of surface water quality with a view to assessing the ecological state of water bodies.

Domain	EMERGENCY RESPONSE
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	482
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Arad, 25.08.2006
RMGC internal unique code	MMGA_1015
Proposal	What will the Romanian authorities and the Canadian company do in case of a geological event e.g. in case the two dams collapse.

Solution

In the unlikely event that such an accident would occur, the Romanian authorities along with the operator will act in accordance with the emergency plans provided for by the existing legislation:

- Internal Emergency Plan
- Emergency Preparedness and Spill Contingency Plan
- External Emergency Plan

The main emergency response actions are the following [1]:

- The aforementioned plans are to be immediately implemented;
- Local and on-site units are to be immediately alerted and deployed;
- Actions should be coordinated with the external emergency plans applicable to the local communities;
- First aid assistance;
- The people living downstream of the secondary containment dam and the residents of the Abrud town are to be immediately notified of the accident and possibly evacuated;
- The site manager and the local, regional and national authorities are to be promptly notified. In the event of an alert on possible terrorist attacks, the representatives of the relevant regulatory and military institutions are to be notified;
- Implementation of the emergency systems, closure of the process plant and of the tailings delivery pipes, consolidation works carried out to the extent required by the nature of the accident (breach repairs, backfilling, reinforcement works, construction of dikes and diversion channels);
- Accident investigation and implementation of corrective and preventive measures;
- Implementation of other specific emergency actions.

The proposed construction of the Corna Dam, intended to contain the tailings, is based on design criteria that comply with Romanian and international standards. These criteria are meant to ensure maximum safety levels during the construction, operational, closure and post-closure stages. They include flood control criteria, safety factors for slope stability and seismic design criteria etc

Based on the criteria previously mentioned, the dam has been designed to withstand an earthquake measuring 8 on the Richter scale. No such event has ever occurred on the Romanian territory and it is hard to imagine the mechanism that could cause such an event in the future.

The main design elements that ensure the dam's increased safety include the following:

- the dam has been designed to retain water resulting from 2 consecutive PMFs;
- with each dam rise, a spillway will be constructed to discharge, in a controlled way, the excess water resulting from potential extreme events. This will help to prevent the erosion of the dam's downstream slopes;
- the rockfill starter dam has an impervious core and an embankment slope measuring 2H:1V downstream and 1.75H:1V upstream;
- The main dam – the Corna rockfill dam, of centerline construction and downstream slopes measuring 3H:1V;
- a drainage system at the bottom of the tailings management facility and a filter layer between the

rock fill and the tailings, to reduce humidity and consolidate the stored material;
- a monitoring system set up on the dam's crest or on its vicinity, to provide timely information regarding potential instability situations, excessive rise of the groundwater in the dam body, excessive increase of the water volume stored in the decant pond;
- implementation of a strict Quality Assurance program, during the entire construction period.

Under these circumstances, an accident resulting in dam failure is highly unlikely. However, hypothetical scenarios have been imagined, based on the assumption that the technical errors resulting from noncompliance with the construction methodology have led to dam failure. These scenarios represent the worst case scenarios that could be identified, taking into account the technical characteristics of the TMF. The scenarios are presented in detail in Chapter 7, the EIA Report, subchapter 6.4.3, pages 117-121).

Referred to subchapters 6.4.3.2 and 6.4.3.6 we like to mention that a new and much more precise and realistic simulation has been subsequently established based on the INCA Mine model, that considers the dispersion, volatilisation and breakdown of cyanides during the downstream movement of the pollutant flow (Whitehead et al., 2006). The new study has been attached to the Report on Environmental Impact Assessment Study (Annex 5.1).

Reference:
[1] Chapter 5, *the Security Report*

Domain	EMERGENCY RESPONSE
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	3115
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Nr. 112129/25.08.2006
RMGC internal unique code	MMGA_1386

Proposal	What will happen in case of ecological accident?
Solution	The term "ecological accident", although quite frequently used in the Romanian media and sometimes, in the foreign media, is not clearly defined and therefore leaves room for interpretation. We suppose that the question refers to a potential accident that might occur on the mining site or to an accident related to the project, which could cause negative effects on the environment. Chapter 7 in the Environmental Impact Assessment Report assesses the risk of occurrence of such accidents, based on various hypothetical scenarios. The assessment also takes into account the effects that the potential accidents could have on the environment. Subchapter 2 mainly deals with the hazards and risks posed by natural factors. Subchapter 3 deals with technological hazards and risks. Subchapter 4 assesses in detail the main scenarios of occurrence of potential accidents during the three stages of the project: construction, operations and closure. Subchapter 5 deals with transport-related hazards and risks of accidents that might occur on the site, as well as on the transportation routes used for the supply of materials and raw materials, as well as for the delivery of the products obtained to the consignee. Major potential accidents are assessed in subchapter 6. Subchapter 7 describes in detail the method of intervention applied in case of an accident or emergency situation.

Domain	EMERGENCY RESPONSE
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	749
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Nr. 109706/21.08.2006 si Nr. 75023/21.08.2006
RMGC internal unique code	MMGA_1529
Proposal	there isn't any safety project agreed with an authorized operator for civilian defense and natural disasters, to be certified in the use of explosives and hazardous chemicals.
Solution	The use of explosives and hazardous substances by RMGC (the operator) is covered by the authorization granted for the totality of the company's operations, in accordance with the legislation in force. As part of the Environmental Impact Assessment (E.I.A.), a Security Report has been developed and was provided to the authorities once with the E.I.A. It was made available to the public at the following internet address http://www.mmediu.ro/dep_mediu/rosia_montana_securitate.htm. Printed copies were also made available at various information centers, in view of the public debate process.