ALROSA

TAILINGS DAM MANAGEMENT

Response to the Church of England Pension Board and the Council on Ethics Swedish National Pension Funds

21 August 2019

Question: Please give a general description of tailings management and risk management principles at ALROSA

PJSC ALROSA ("the Company") takes a holistic approach to safety and reliability of its production facilities. The Company follows all the requirements imposed by the Russian law on hydraulic structures at tailings facilities.

Government oversight

Compliance with legal, regulatory and engineering requirements for hydraulic structures is controlled by the Government. The competent authority is Rostechnadzor (Federal Environmental, Industrial and Nuclear Supervision Service of Russia). Once every five years, the Company undergoes a comprehensive audit. The audit is at all times preceded by the preparation of the so-called Hydraulic Structure Safety Declaration (the declaration is prepared by an independent Rostechnadzor-certified expert organisation after a detailed inspection of the hydraulic structures). When preparing the declaration, experts assess compliance with design specifications and regulatory requirements, measure actual levels and assess the condition of dams and other structures. After that, Rostechnadzor reviews the declaration and decides whether to issue or suspend the operation permit for hydraulic structures.

In addition, Rostechnadzor's experts carry out scheduled and ad hoc inspections within each five-year period.

Internal control

The Company takes a centralised approach to managing risks, including risks related to the operation of hydraulic structures.

Hydraulic structure risk management at the Company: organisational chart

Chief Engineer	Supervises operation risk management
Risk Management Department	Coordinates risk management processes, accumulates information about risks and reports on risks to the Company's Executive Committee and Supervisory Board
Deputy Chief Engineer for Hydraulic Structures (responsible for operation of the Company's hydraulic structures)	Organises and controls monitoring activities at the Company's hydraulic structures, executes day-to-day risk management, identifies risk response measures, and organises development of risk mitigation plans
Yakutniproalmaz Institute	Supervises compliance with design solutions, conducts regular inspections of hydraulic structures, issues recommendations on safe operation and risk mitigation, and develops engineering design documents (engages third-party experts when necessary)
Chief engineers of divisions (GOK) that operate hydraulic structures	Organise risk management, analysis and monitoring processes and take risk mitigation measures
Deputy chief engineers of GOK that operate hydraulic structures	Organise risk management, analysis and monitoring processes at hydraulic structures, execute day-to-day risk management and take risk mitigation measures

Operational staff at hydraulic structures	Monitor the condition of structures, identify risks and mitigate the risks of accidents at hydraulic structures on a daily basis
Industrial hygiene laboratories	Take regular water samples and analyse their chemical composition to subsequently assess the condition of hydraulic structures
Environmental Office	Controls and monitors environmental conditions at hydraulic structures
Additional control by third-party experts	
Independent expert organisations	Conduct independent expert reviews of design documents, inspect hydraulic structures, assess risks, and do specific monitoring activities

Question: Have you changed, or are you planning to change, your approach to tailings management after the accidents in Brumadinho, Mariana, at the Mount Polley mine, etc.? Have you specifically inspected all the upstream tailings dams and have you taken measures to protect local communities and environment (installation of buttresses, evacuation, etc.)?

The Company launched an initiative to identify and assess environmental risks at its hydraulic structures. To do this, the Company engaged Willis CIS Insurance Broker LLC (License SB-Yu No. 4007-77), a local subsidiary of leading international insurance broker Willis Towers Watson (NASDAQ: WLTW) founded in 1828 and providing end-to-end risk consulting services.

After the engagement is completed (completion scheduled for late 2019), the Company will make necessary conclusions and, if required, make changes to its tailings management approach.

Hydraulic structures operated by the Company and its subsidiaries:

1. Tailings pond at processing plant No. 3
2. Tailings pond at the Pravy Kieng stream
3. Hydraulic structures of the tailings pond at the Novy stream
4. Tailings pond at processing plant No. 8, stage 1
5. Tailings pond at processing plant No. 14
6. Sectioned tailings pond at processing plant No. 16, stage 1 (ALROSA-Nyurba)
7. Tailings pond with recycled water fed to the processing plant – classified as Class 3 (territorial emergency) facility by EMERCOM

Question: Unless mentioned previously, please specify whether you are in any way connected to the tailings ponds through any joint ventures.

The Company holds a 41% stake in Angola-based Catoca Mining Ltd, which operates a tailings pond. The Company is not involved in day-to-day production management operations at Catoca.

Mirny Division (GOK)

Tailings pond at processing plant No. 3, stage 3

Disclosure requirements

The operation permit for hydraulic structures of the tailings pond and the relevant safety declaration are valid until 28 November 2019	
1. Tailings pond name/description	Tailings pond at processing plant No. 3, stage 3
2. Location	Start and end points of the tailings dam: 62°36'25.86"N, 113°55'6.33"E and 62°36'27.52"N, 113°57'40.20"E.
3. Type of ownership	Owned and operated by the Company
4. Status	In operation
5. Date of commissioning	3 January 1990
6. Does the current design documents provide for any tailings pond operating/decommissioning procedures?	Yes
7. Dam type	Upstream
8. Current maximum height	75.0 m
9. Current pond volume	60.82 million cu m
10. Expected pond volume in five years	71.40 million cu m (as planned for January 2024)
11. Latest assessment by independent experts	Pre-declaration inspection of hydraulic structures by PromTechBezopasnost (Moscow) on 22 March 2019
12. Do you have a full set of relevant engineering (design, construction, operation and mothballing/decommissioning) documents?	Yes
13. What hazard class is assigned to this facility based on potential consequences of an emergency?	Class 1 potentially hazardous industrial facilities (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003)
14. What are the classification criteria?	Dam height, underlying soils, social responsibility, and potential consequences of dam failures
15. Have you ever been refused a safety certificate / operation permit or have independent technical experts ever found any safety-related problems at the facility (regardless of whether such facility has been later certified by the inspecting company or any other company)?	No

16. Is the technical condition of the facility controlled internally? Or do you engage third-party organisations for this purpose?	Internal control and government control
17. Have you conducted a study to estimate potential negative consequences of an emergency for the local communities, environment and critical infrastructure downstream and assess overall damage? If yes, when was the study conducted?	Yes, we did a calculation of potential damage in 2014
18. Do you have a) a dam decommissioning plan and b) does it provide for long-term monitoring measures?	a) no b) no
19. Have you conducted / do you plan to conduct a study to assess the impact of extreme weather conditions, which have become more frequent due to climate change, on the facility within the next, for example, two years?	Yes, the study is scheduled for 2020
20. Any other relevant information and accompanying documents	Environmental risk assessment carried out in August 2019 by Willis CIS Insurance Broker

Udachny Division (GOK)

Tailings pond at the Pravy Kieng stream, processing plant No. 12

Disclosure requirements

The operation permit for hydraulic structures of the tailings pond and the relevant safety declaration are valid until 28 September 2020	
1. Tailings pond name/description	Tailings pond at the Pravy Kieng stream, processing plant No. 12 (stage 2), Udachny GOK, ALROSA
2. Location	Udachny, Mirninsky District, Republic of Sakha (Yakutia), Far Eastern Federal District, Russian Federation Coordinates: 66°24'32.96"N 112°08'36.14"E
3. Type of ownership	Owned and operated by the Company
4. Status	Used for storing tailings after ore processing and feeding recycled water to processing plant No. 12
5. Date of commissioning	30 June 1989
6. Does the current design documents provide for any tailings pond operating/decommissioning procedures?	Yes
7. Dam type	Upstream
8. Current maximum height	71.00 m
9. Current pond volume	256.42 million cu m
10. Expected pond volume in five years	261.38 million cu m
11. Latest assessment by independent experts	Expert opinion provided by PromTechBezopasnost on 1 September 2015
12. Do you have a full set of relevant engineering (design, construction, operation and mothballing/decommissioning) documents?	Yes
13. What hazard class is assigned to this facility based on potential consequences of an emergency?	Class 2 potentially hazardous industrial facilities (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003)
14. What are the classification criteria?	Dam height, underlying soils, social responsibility, and potential consequences of dam failures
15. Have you ever been refused a safety certificate / operation permit or have	No

independent technical experts ever found any safety-related problems at the facility (regardless of whether such facility has been later certified by the inspecting company or any other company)?	
16. Is the technical condition of the facility controlled internally? Or do you engage third-party organisations for this purpose?	Internal control and government control
17. Have you conducted a study to estimate potential negative consequences of an emergency for the local communities, environment and critical infrastructure downstream and assess overall damage? If yes, when was the study conducted?	Yes, the study was conducted on 11 August 2015
18. Do you have a) a dam decommissioning plan and b) does it provide for long-term monitoring measures?	No
19. Have you conducted / do you plan to conduct a study to assess the impact of extreme weather conditions, which have become more frequent due to climate change, on the facility within the next, for example, two years?	Yes, the study is scheduled for 2020
20. Any other relevant information and accompanying documents	Environmental risk assessment carried out in August 2019 by Willis CIS Insurance Broker. A tailings thickening unit will be launched at the processing plant in December.

Udachny Division (GOK)

Hydraulic structures of the tailings pond at the Novy stream

Disclosure requirements

The operation permit for hydraulic structures of the tailings pond and the relevant safety declaration are valid until 14 April 2021	
1. Tailings pond name/description	Hydraulic structures of the tailings pond at the Novy stream, Udachny Division, ALROSA
2. Location	Udachny, Mirninsky District, Republic of Sakha (Yakutia), Far Eastern Federal District, Russian Federation Coordinates: 66°25'19.39"N 112°21'48.51"E
3. Type of ownership	Owned and operated by the Company
4. Status	In operation
5. Date of commissioning	24 December 1974
6. Does the current design documents provide for any tailings pond operating/decommissioning procedures?	Yes
7. Dam type	Upstream
8. Current maximum height	63.50 m
9. Current pond volume	99.87 million cu m
10. Expected pond volume in five years	136.08 million cu m
11. Latest assessment by independent experts	Expert opinion provided by PromGidroTekhnika on 14 April 2016
12. Do you have a full set of relevant engineering (design, construction, operation and mothballing/decommissioning) documents?	Yes
13. What hazard class is assigned to this facility based on potential consequences of an emergency?	Class 4 potentially hazardous industrial facilities (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003)
14. What are the classification criteria?	Dam height, underlying soils, social responsibility, and potential consequences of dam failures
15. Have you ever been refused a safety certificate / operation permit or have	No

independent technical experts ever found any safety-related problems at the facility (regardless of whether such facility has been later certified by the inspecting company or any other company)?	
16. Is the technical condition of the facility controlled internally? Or do you engage third-party organisations for this purpose?	Internal control and government control
17. Have you conducted a study to estimate potential negative consequences of an emergency for the local communities, environment and critical infrastructure downstream and assess overall damage? If yes, when was the study conducted?	Yes, the study was conducted on 23 March 2016
18. Do you have a) a dam decommissioning plan and b) does it provide for long-term monitoring measures?	No
19. Have you conducted / do you plan to conduct a study to assess the impact of extreme weather conditions, which have become more frequent due to climate change, on the facility within the next, for example, two years?	Yes, the study is scheduled for 2020
20. Any other relevant information and accompanying documents	Environmental risk assessment carried out in August 2019 by Willis CIS Insurance Broker

Aikhal Division

Tailings pond at processing plant No. 8

Disclosure requirements

The operation permit for hydraulic structures of the tailings pond and the relevant safety declaration are valid until 9 July 2020	
1. Tailings pond name/description	Tailings pond at processing plant No. 8, stage 1: Tailings dam and secondary dykes
2. Location	Coordinates: latitude 65°55'16.32"N longitude 111°28'34.35"E
3. Type of ownership	Owned and operated by the Company
4. Status	In operation
5. Date of commissioning	1 September 1990
6. Does the current design documents provide for any tailings pond operating/decommissioning procedures?	Yes
7. Dam type	Upstream
8. Current maximum height	34 m
9. Current pond volume	31.7 million cu m
10. Expected pond volume in five years	32.8 million cu m
11. Latest assessment by independent experts	*Pre-declaration inspection involving the expert centre of PromGidroTekhnika on 1 August 2014*
12. Do you have a full set of relevant engineering (design, construction, operation and mothballing/decommissioning) documents?	Yes
13. What hazard class is assigned to this facility based on potential consequences of an emergency?	Class 2 potentially hazardous industrial facilities (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003)
14. What are the classification criteria?	Dam height, underlying soils, social responsibility, and potential consequences of dam failures
15. Have you ever been refused a safety certificate / operation permit or have independent technical experts ever found any safety-related problems at the facility (regardless of whether such facility has been later certified by the inspecting company or any other company)?	No

16. Is the technical condition of the facility controlled internally? Or do you engage third-party organisations for this purpose?	Internal control of the technical condition, with third-party expert organisations engaged
17. Have you conducted a study to estimate potential negative consequences of an emergency for the local communities, environment and critical infrastructure downstream and assess overall damage? If yes, when was the study conducted?	Yes. We did a calculation of potential damage in 2015
18. Do you have a) a dam decommissioning plan and b) does it provide for long-term monitoring measures?	a) Yes, the tailings pond is due for decommissioning and reclamation in 2020. Relevant measures are being developed at the moment b) No
19. Have you conducted / do you plan to conduct a study to assess the impact of extreme weather conditions, which have become more frequent due to climate change, on the facility within the next, for example, two years?	Yes, the study is scheduled for 2020
20. Any other relevant information and accompanying documents	Environmental risk assessment carried out in August 2019 by Willis CIS Insurance Broker

Aikhal Division

Tailings pond at processing plant No. 14

Disclosure requirements

The operation permit for hydraulic structures of the tailings pond and the relevant safety declaration are valid until 16 April 2024	
1. Tailings pond name/description	Tailings pond at processing plant No. 14
2. Location	Coordinates: latitude 66.0146 longitude 111.4141
3. Type of ownership	Owned and operated by the Company
4. Status	In operation
5. Date of commissioning	1 August 1996
6. Does the current design documents provide for any tailings pond operating/decommissioning procedures?	Yes
7. Dam type	Upstream
8. Current maximum height	100 m
9. Current pond volume	153.1 million cu m
10. Expected pond volume in five years	184 million cu m
11. Latest assessment by independent experts	*Pre-declaration inspection involving the expert centre of PromGidroTekhnika on 27 June 2018*
12. Do you have a full set of relevant engineering (design, construction, operation and mothballing/decommissioning) documents?	Yes
13. What hazard class is assigned to this facility based on potential consequences of an emergency?	Class 4 potentially hazardous industrial facilities (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003)
14. What are the classification criteria?	Dam height, underlying soils, social responsibility, and potential consequences of dam failures
15. Have you ever been refused a safety certificate / operation permit or have independent technical experts ever found any safety-related problems at the facility (regardless of whether such facility has been later certified by the inspecting company or any other company)?	No

16. Is the technical condition of the facility controlled internally? Or do you engage third-party organisations for this purpose?	Internal control and government control
17. Have you conducted a study to estimate potential negative consequences of an emergency for the local communities, environment and critical infrastructure downstream and assess overall damage? If yes, when was the study conducted?	Yes, calculation of potential damage in 2019
18. Do you have a) a dam decommissioning plan and b) does it provide for long-term monitoring measures?	a) no b) no
19. Have you conducted / do you plan to conduct a study to assess the impact of extreme weather conditions, which have become more frequent due to climate change, on the facility within the next, for example, two years?	Yes, the study is scheduled for 2020
20. Any other relevant information and accompanying documents	Environmental risk assessment carried out in August 2019 by Willis CIS Insurance Broker

Hydraulic structures of tailings ponds operated by ALROSA's subsidiaries

ALROSA-Nyurba (subsidiary)

Sectioned tailings pond at processing plant No. 16, stage 1

Class 4 (territorial emergency) facility (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003).

Address: 25 Lenina St., Nyurba, Nyurba District, Republic of Sakha (Yakutia)

Contact e-mail: LissNYu@alrosa.ru

Date of commissioning: 21 July 2003

Current maximum height: 21.0 m

Total volume: 14.30 million cu m

Dam type: ravine (in terms of relief) and downstream (in terms of filling mode)

A tailings thickening unit was put into operation seven years ago.

Most tailings are now deposited as a cake.

Severalmaz (subsidiary)

Tailings pond with recycled water fed to the processing plant

Class 3 (territorial emergency) facility (EMERCOM classification, Order No. 105 issued by the Russian Ministry of Emergency Situations on 28 February 2003).

Address: Svetly, Primorsky District, Arkhangelsk Region, Russia

Contact e-mail: LissNYu@alrosa.ru

Type of ownership: owned and operated by the Company

Date of commissioning: 3 April 2014

Current maximum height: 18.6 m

Total volume: 14.316 million cu m

Dam type: upstream