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**Mr.**  
**Ivo ALEHNO**  
**Head of Unit**  
**European Commission**  
**Unit ENER D.3 – Radiation protection**  
**Euroforum Building EUFO 4157**  
**L-2920 Luxembourg**

Prague, 28 January 2014

No.: SÚJB/RO/3208/2014

Dear Mr. Alehno,

In accordance with the request of DG ENERGY Mr. Philip Lowe, sent to the Czech Republic by the letter No. ENER/D4/mp/Ares(2012)652628 from 1.6.2012, I send to you in the attachment to this letter the list of measures and improvements adopted based on recommendations of the inspection conducted in accordance with Article 35 of Euratom Treaty in the Czech Republic in 2010 year.

It can be stated, that all recommendations were deeply analyzed and most of them were fully reflected and resulted to the improvement of quality and effectiveness of activities related to the Article 35 of Euratom Treaty in the Czech Republic.

Sincerely



Karla Petrová  
 Deputy Chairman for radiation Protection  
 State Office for Nuclear safety  
 The Czech Republic

<b>DG ENER</b>					
CODE DOSSIER :					
<b>21 FEV. 2014</b>					
SECTION			ECHEANCE		
DG	ASS	001	01	SIAC	SRD
A	B	C		DGA BC	
USADE	CFC JPK	CFC LSC	(10)	E	

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## Attachment

With a view to implementation of the individual recommendations, we hereby provide the following information:

**1. Concerning the recommendation contained in the conclusion to Sections 6.1.6, 6.3.5 and 6.4 of the Technical Report**

*The verification does not give rise to specific remarks. However, the team would like to point out the importance of long-term stewardship for the site.*

When surface areas **without potential future risks** are to be cleaned up, priority is given to reforestation. As a rule, this is undertaken by the state-owned company DIAMO for a five-year period, following which the land – together with the trees grown on it – is transferred to the state-owned Lesy ČR forestry-management company. Agricultural reclamation – in the course of which the surface is covered with a more substantial layer of soil (at least 50 centimetres; in the case of reforestation, approximately 30 centimetres) – is carried out to a lesser extent. The land is transferred to the Agricultural Land Fund.

Areas with **potential risks** will be administered permanently by DIAMO or its successors (other organisations authorised by the State). The duties of such organisations are to perform post-clean-up monitoring (of – for example – the contamination of ground water and the subsidence trough). Furthermore, security strips are created at the sites in question, together with associated enclosing structures. Areas of this kind also include sedimentation basins, which even after sealing and reclamation continue (pursuant to current legislation) to be items of water-management infrastructure and will be permanently administered by DIAMO or its successors.

Pursuant to current legislation, stewardship over cleaned-up sites with potential risks that are significant from the point of view of radiation protection is provided by the SÚJB [State Office for Nuclear Safety].

**1. Concerning the recommendation contained in the conclusion to Section 6.2.2.1 of the Technical Report**

*The verification team suggests exploring the possibility of using a bar-code system for sample-labelling. This would allow authorised staff members to perform sample checks efficiently.*

All the factors having been taken into consideration, the recommendation was not accepted for the following reasons:

- a) Since the introduction approximately 10 years ago of the quality system and of laboratory accreditation, no case has been recorded in which samples have been mixed up. There has been no instance where either internal or external audits have called into question the system introduced for recording samples.
- b) In the course of the assessment the expected contribution and the cost of setting up and maintaining the system were evaluated. The assessment involved consultation of a firm that has already introduced the system. The introduction of the system was not assessed as effective.

**2. Concerning the recommendation contained in the conclusion to Section 6.2.2.2 of the Technical Report**

*The verification team suggests having the sample preparation procedure available at the work place in order to avoid delays or mistakes when preparation is performed by less experienced staff.*

The recommendation has been accepted in full. The instructions are displayed in the individual workplaces according to type of experiment.

**3. Concerning the recommendation contained in the conclusion to Section 6.4 of the Technical Report**

*The verification team recommends thorough investigations with regard to long-term stewardship of the*

remediated sites. It draws the attention of the authorities to the fact that deep-rooting trees may deteriorate the soil cover.

In DIAMO's experience, soil cover is more likely to be at risk from trees with a shallow root system – in particular on slopes, where erosion and exposure of the subsoil may occur. In cases where a sedimentation basin is sealed in the course of reclamation, biological reclamation is carried out through the grassing-over of the surface and may be supplemented where necessary by the planting of shallow-rooting bushes. All risks are evaluated in the course of an environmental-impact assessment. Any proposal for optimum soil cover will also take the effects of the weather into consideration.

In the specific case of the reclamation of the Olší waste dump, no sealant layers were installed. In this instance the use of deep-rooting woody plants is an advantage, since such plants are more wind-resistant and they do not suffer during the dry season.

#### **Information concerning progress or significant changes**

Since 2010 the following changes have occurred in uranium production and in clean-up technologies at the Stráž deposit (the figures represent tonnes of uranium concentrate).

<b>processing method</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>traditional</b>	224	202	203	180
<b>deposit leaching</b>	0	0	0	0
<b>heap leaching</b>	0	0	0	0
<b>other methods</b>	30	26	25	25
<b>total</b>	254	228	228	205

In the Stráž area a **new technology (NDS 10)** has been introduced, by means of which residual solutions containing a 25 g/l concentration of dissolved matter are processed. At the first stage, such solutions are neutralised with lime, then the precipitated suspension is passed through filter presses, together with the suspension from the second stage of neutralisation. At the second stage the filtrate from the filter press is once again neutralised with lime. The filter cake is transported to, and deposited in, the sedimentation basin. The slime from the second stage of neutralisation is steam-stripped to produce 25 % ammoniacal water, which is used in SLKR technology; the surplus is sold to external clients. The stripped slime is pumped into the former underground mine.

#### **Information concerning the financing of clean-up and disposal operations carried out by DIAMO**

Clean-up and disposal operations carried out by DIAMO are fully reimbursed from a chapter within the Czech Republic's state budget, pursuant to Section 43(a) of Act No 44/1988 (the Mining Act). The reason for this method of financing is the fact that, when the uranium industry was restructured, uranium mines – whose sole owner is the State – were included by the government in the phasing-out policy – hence a reserve fund for clean-up and reclamation and for making good mining damage could no longer be established in those cases.

Clean-up of the Stráž deposit following chemical extraction of uranium is financed from the legal point of view on the basis of an agreement between DIAMO and the Czech Finance Ministry concerning reimbursement of the costs and expenditure incurred in dealing with the consequences of the chemical extraction of uranium and associated activities in the Stráž pod Ralskem area.

#### **4. Concerning the recommendation contained in the conclusion to Section 7.2.1 of the Technical Report**

*The verification team suggests using electronic tools (data base, LIMS) for sample registration and sample-data management.*

Sample records are mainly kept in paper form. On the basis of the verification team's recommendation, an electronic means of recording samples in the form of a results database was introduced with effect from 10 January 2011.

## **5. Concerning the recommendation contained in the conclusion to Section 7.2.2 of the Technical Report**

*The verification team recommends exploring the possibility of using an automatic reader system, in particular to allow more objective track identification and to avoid the physically stressing task of reading tracks 'by eye'.*

*The verification team suggests analysing the long-term stability of the spectra archiving method – e.g. vulnerability of CDs – and eventually (sic) exploring the usefulness of an external hard disc.*

Laboratories are equipped with automatic reading devices. A series of comparisons has been carried out between evaluation by an automatic reading device and evaluation by a human operator. Furthermore, regular checks are carried out under the auspices of the Authorised Metrology Centre on instruments designed to measure the volume activity of radon and equivalent volume activity of radon. On the basis of these metrological and comparative tasks, the objectivity of an evaluation procedure can be demonstrated.

The content of a CD-ROM is stored on a back-up disc at the National Nuclear, Chemical and Biological Protection Institute [Czech abbreviation SÚJCHBO] (the requirement for selected data to be stored in such a way is laid down in the National Nuclear, Chemical and Biological Protection Institute's Crisis Readiness Plan).

## **7. Concerning the recommendation contained in the conclusions to Sections 8.2., 8.3. and 8.4 of the Technical Report**

*The verification team recommends re-arranging the ambient gamma dose rate detector tubes in order to avoid any shielding effects. It also suggests finding a solution to avoid presentation of very deviating values for the two detectors. This could be done e.g. by either showing '---' for the less reliable value or by giving uncertainties or a similar method.*

*The verification team suggests finding a solution to avoid presentation of very deviating values for the two gamma dose rate detectors.*

*The verification team suggests exploring the possibility of siting the detectors at one metre above ground, with a view to allowing the data to be used for deposition estimates as well.*

In the course of 2011 a new software application – MonRaS – was brought into operation. This enabled the problem of presenting both values to be solved. See [www.suib.cz](http://www.suib.cz) a Radiation Situation Monitoring-> MonRaS->External itTadiation->Early Warning Network.

A selection procedure is has been launched for the purpose of replacing all equipment at measuring sites on the network. Detectors are to be placed 1 metre above ground at all measuring sites.