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Your ref. Email/ July 21, 2022	Our ref. 5787/2022	Attended to by/contact M. Vachova/ +421258221138	Bratislava August 1, 2022
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RE: GLOBAL 2000 Freedom of Information Request under act no. 211/2000 regarding Commissioning of Mochovce Nuclear Plant Unit 3

Dear Dr. Uhrig,

We refer to your request for information, delivered to the Nuclear Regulatory Authority of the Slovak Republic (ÚJD SR), as a liable person according to § 2 par. 1 of Act No. 211/2000 Coll. on Free Access to Information and on Amendments to Certain Acts (Freedom of Information Act), as amended, on July 21, 2022.

Following your request, ÚJD SR as a liable person hereby according to § 18 par. 1 of the Freedom of Information Act provides you with the following information, which will be sent to you electronically to your e-mail address reinhard.uhrig@global2000.at.

Requested information:

Question 1:

- a) *Can ÚJD confirm that there currently is a process of checking welds on austenitic pipelines in Mochovce Unit 3?*
- b) *If so, when is the process expected to be completed?*

ÚJD SR response:

- a) ÚJD SR can confirm that an ongoing verification of the root welds is in place. Slovenské elektrárne, a. s. (SE, a. s.), has prepared exhaustive verification program. This program includes several analyses, calculations and third-party assessments to address mechanical integrity and corrosion aspects. In parallel SE, a. s., is measuring on site all critical categories of welds to eliminate potential risk. The representatives of the Austrian government were informed on this issue and ongoing control during the bilateral Slovak - Austrian meeting, held on 7 and 8 June 2022 in Vigľaš, Slovakia. Unplanned ÚJD SR inspection is in progress, aimed at the identifying the causes and determining corrective measures in this case.
- b) The selected verification phases have already been fully completed and some are currently ongoing, to be completed in the upcoming weeks.

Question 2:

What is the total number of problematic welds on austenitic pipelines that has been discovered in Mochovce Unit 3?

ÚJD SR response:

The quality control is still ongoing. So far, less than 70 welds show symptoms of non-compliance with the approved welding procedure. All identified problematic welds have been replaced, except of 5 welds on non-classified systems, where in case of need it can be easily separated with no impact on system operation. These 5 welds are kept for monitoring purposes, to monitor the effects of the corrosion environment on their characteristics.

Question 3:

In what parts of Mochovce Unit 3 were the problematic welds on austenitic pipelines discovered, i.e. primary circuit, secondary circuit or other systems?

ÚJD SR response:

The majority of the findings were identified on the nuclear island part. Within its verification program SE, a. s., is verifying all systems that can be potentially impacted. Primary circuit including any pipeline of safety class I were not affected by this issue.

Question 4:

What is the follow-up process for making sure that there are no further problematic welds on austenitic pipelines in Unit 3?

ÚJD SR response:

Additional phases of verification are defined, whereas the selection criteria follow nuclear safety principles. SE, a. s., within its verification programs is analyzing potential risks and based on risk assessments, the further measures are defined.

Moreover, all replaced welds are being thoroughly examined. Experiments are underway in corrosion loops and the effect of the corrosion environment on such welds is being evaluated.

Question 5:

a) *Are components other than austenitic pipelines also affected in Unit 3, e. g. valves or flaps?*

b) *If not: What is the process for making sure that this is not the case?*

ÚJD SR response:

a) No other components are affected. Problem with gas-backing, which is leading to carbon-based filler material usage is limited to equipment where it is difficult to ensure proper gas-backing, caused by size/length of equipment (pipelines) and there is no connection of that problem with other components. This issue is related to construction welds only.

b) At this moment there is no process applied to confirm usage of improper filler materials on other type of components. Reason is that on other type of components, gas-backing is much easier to ensure, and welding activity is applied in limited scope and with minimum impact on that material.

Question 6:

- a) *Can ÚJD confirm that this welding issue does not concern the Mochovce Unit 4 project?*
- b) *If not: What is the process for eliminating the possibility of problematic welds in Unit 4?*

ÚJD SR response:

- a) ÚJD SR confirms that this issue concerns also Unit 4 of Mochovce NPP.
- b) SE, a. s., is currently preparing a preventive plan how to verify Unit 4 systems and pipelines prior to functional testing. Several preventive measures were proposed in order to prevent the occurrence of this issue on the new components to be installed as well as to identify any potential non-conformity on already installed components. For all new welds the magnetic test of the root weld is added to the plan of controls and tests.

Question 7:

- a) *Can ÚJD confirm that this welding issue (carbon steel welding material on austenitic pipelines) does not also affect the operating nuclear Units at Mochovce 1, 2 and the operating Bohunice Units 3, 4?*
- b) *What is the process for eliminating the possibility of problematic welds in the operating nuclear Units in Slovakia?*

ÚJD SR response:

- a) ÚJD SR cannot exclude this fact in this moment. The verification is ongoing.
- b) Overall, based on the chemical parameters, operating modes as well as the state of integrity of the pipeline routes in the operating units, i.e. Mochovce 1&2 and Bohunice 3&4, it can be concluded that for the last 20 years of operation this problem is not indicated. After the occurrence of this problem on the MO34 project, approximately 250 welded joints were randomly inspected on Units 1 and 2 of Mochovce NPP. After the evaluation of results of weld checks on Mochovce Unit 3 and 4, the priorities of the checks for Mochovce 1&2 and Bohunice 3&4 will be determined. For future/new welds, the ISM documentation for welds is currently updated, where control mechanisms are added to avoid such a case. Based on the mode-chemical perspective, ÚJD SR do not foresee the occurrence of this problem in existing welded joints. Nevertheless, welds made by the "toxic" welders identified in the MO34 project will be checked at Mochovce 1&2 as well as at Bohunice 3&4.

Question 8:

- a) *Which contractors or subcontractors were responsible for welding works and use of carbon steel welding material on austenitic pipelines in Mochovce Unit 3?*
- b) *Are these contractors or subcontractors still working on the Mochovce Unit 3 project?*
- c) *If b) is the case, what measures have been taken to eliminate the possibility of reoccurrence of similar problems with these contractors or subcontractors?*

ÚJD SR response:

- a) The list of such contractors is not completed yet, as the welds quality check is still ongoing. This question could be answered after completing of ÚJD SR inspection.
- b) Yes, all of the contractors are working on the Mochovce project as of today. However, all welders identified to use improper welding procedure have been put on the black list and excluded from work on the MO34 project as well as from work on other nuclear facilities of SE, a. s.
- c) As stated above, SE, a. s., triggered verification through measurement campaign and implemented additional on-site preventive measures. For all new welds the magnetic test of the root weld is added to the plan of controls and tests. All welders identified to use improper welding procedure have been

put on the black list and excluded from work on the MO34 project as well as from work on other nuclear facilities of SE, a. s.

Question 9:

Was there a report issued for the verification of material deliveries for Mochovce unit 3 other than pipeline components? If so, where was this published? If not, why not?

ÚJD SR response:

The first phase of verification of other material supplies from the FEBE chain outside of the pipeline components is ongoing. Up to this time, according to the available information, no non-conformity has been identified. After completion of the verification, the results will be subject to verification by ÚJD SR.

Question 10:

Was there a report issued for the verification of VUKI cables for Mochovce Unit 3? If so, where was this published? If not, why not?

ÚJD SR response:

All problematic VUKI Nx1 L5 cables have been completely replaced by KABEX cables. No report on the VUKI cables replacement was elaborated. However, the results of the process of replacing defective VUKI cables are stated in the reasoning of the draft second-instance decision, which was published on January 25, 2022 on the website of the ÚJD SR <https://www.ujd.gov.sk/publication-of-the-basis-for-the-second-instance-decision-on-mochovce-unit-3/?lang=en>

Yours sincerely,

Miriam Vachova, m. p.
Director of Chancellery