

The safety and performance of nuclear plant relies, among others, on the quality of nuclear fuel. The quality fulfilling designed criteria of the fuel in use is inspected and reported on periodically. Visual inspection focuses on the condition of the fuel based on its visual properties. During the inspection, the fuel is being recorded and analysed by the inspector. The current state of the fuel assemblies is compared to the historical statistics which helps do decide whether this particular assembly remains or gets replaced. This thesis describe a project initiated by Centrum Výzkumu Řež focusing on digital image processing methods application to visual inspection process. The result of the project is a tool that accelerates the process of report making. Firstly, it transforms the inspection video into one image overview and highlight a significant part (more than 95%) of possible defects to the inspector.