

Environmental and Social Data Sheet

Overview

Project Name:	TVO SAFETY IMPROVEMENTS
Project Number:	(2015-0675)
Country:	Finland
Project Description:	The project includes plant modifications - namely the replacement of major safety related equipment and the introduction of a new safety system - at the two operating units of the Olkiluoto Nuclear Power Plant.

EIA required:	no
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Project included in Carbon Footprint Exercise ¹ :	no
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Environmental and Social Assessment

Environmental Assessment

The project includes safety related equipment replacement and installation of new components in order to improve safety and reliability of the units in operation. The existing emergency diesel generators (EDG) and reactor internal pumps (RIP) with their frequency converters (FECO) will be replaced. A new additional emergency diesel generator and an alternate coolant injection system (ACIS) will be installed. All the project components are to be implemented within the existing nuclear power plant site having a valid environmental permit. Although nuclear power stations are listed in Annex I of EIA Directive, this project includes only minor changes at the already authorised Olkiluoto Nuclear Power Plant, which do not have significant adverse effects on the environment. Therefore, based on technical characteristics the project does not fall under projects listed in Annex I and II of the EIA Directive (2011/92/EU), consequently no EIA is required. This was confirmed when in 2014 the environmental permit of OL1&2 units was revised. The new EDG project was presented to the authority and it was included in the revised permit.

All the sub-projects bring improvements in one of the basic safety topics of the post-Fukushima EU Nuclear Stress Test, namely in resistance of the reactors to the total loss of electrical power and ultimate heat sink. The EDG and ACIS projects are included in the National Action Plan for Finland prepared, following the Stress Test.

The type of works – e.g. equipment replacement, installation of new pipelines, cables and instrumentation inside existing facilities, brown-field construction works – do not represent environmental risk if appropriate working practices are applied.

The emergency diesel generators are seen as a critical safety component of the nuclear power plant, rather than dedicated power generation units. They run only a few hours during the periodic tests usually carried out monthly. Cumulative running hours are typically less than 40 hours per year for each EDG, and operation is very seldom longer than two hours. Furthermore, most of the time the EDGs are running idle or at very low output. EDGs used for nuclear applications are only tested approximately once a year at rated output. The emission footprint of an EDG is marginal on an annual average. These investments are therefore compliant with the Bank's CO₂ Emissions Performance Standard, as the applicable perimeter for the EPS in this case is the nuclear plant as a whole. The factory acceptance test emission

¹ Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and savings.

results will be evaluated against Government Decree on the environmental protection requirements of energy production units with a rated thermal input below 50 megawatts (750/2013) applying the limits for emergency operating units.

The project will reduce the probability of severe accidents and radioactive releases. New state of the art emergency diesel generators with improved safety features and enhanced emission characteristics will be installed. The reactor internal pump replacement will result in removal of toxic material (asbestos) currently present in the bearings. The project will contribute to climate change mitigation by supporting low carbon power generation.

The nuclear sector legislation in Finland adequately implements the relevant international Conventions and treaties and provides an appropriate framework for the nuclear sector. It effectively addresses management of spent fuel and radioactive wastes fulfilling the requirements of the related European Council Directive (2011/70/EURATOM). The producer of nuclear waste is responsible for the implementation and expenses of the pertinent waste management and decommissioning activities. At the nuclear power plant sites there are interim storages for spent fuel as well as repositories for low and intermediate level radioactive wastes. The spent fuel disposal project in Finland is the most advanced one in the world approaching the operational license application stage. Start of spent fuel disposal is foreseen for the early 2020's.

Other Environmental and Social Aspects

The environmental system of TVO with the programs and audit procedures as well the environmental statement including the indicators is EMAS (eco-management and audit scheme) registered and fulfils the requirements of Regulation EC No. 1221/2009. The operations are also certified according to the international ISO 14001 standard, including the energy efficiency system.

The operational impacts to environment are closely monitored and immediate actions are taken whenever necessary. The most significant environmental effect is a minor increase in seawater temperature near the plant. Radioactive release levels are only fractions of regulatory limit values.

Occupational health and safety system of the Promoter is certified to OHSAS 18001 standard. Safe performance of work and consistent operating procedures are the goals and objectives specified for occupational safety. Extensive hazard identification and risk assessment are the tools used to minimize accidents and incidents. Occupational safety indicators are monitored regularly.

Conclusions and Recommendations

Considering the technical characteristics of the project and based on the environmental and social information provided by the Promoter, the Project is acceptable for EIB financing in E&S terms.