

Project MARMARAY - A Case Study

Project MARMARAY is a 76 kilometer long, rail line improvement and development project which connects the railways of the European and the Asian sides of Istanbul by tube tunnels passing under the Bosphorus. The details of the project can be found in [1] and [2].

Having become operational on 29th of October 2013, MARMARAY has brought along several discussions. Since its opening ceremony MARMARAY has been on the agenda with its frequent breakdowns and the reason of these breakdowns has been explained by power cuts, overloading and signalization failures. Appertaining to the issue, Minister of Transportation, Maritime Affairs and Communications Binali YILDIRIM commented: "Was the power cut in MARMARAY's power? There is no disruption in the train service and no one aggrieved. A power cut stemming from the city electricity network had occurred." [3]

Some of the assertions concerning MARMARAY can be listed as follows:

- The sistem should be kept in testing unless the controlling institution grants its approval. Transporting passengers before the completion of the 15 days conformity and security evaluation period of TÜV SÜD (Technical Supervision Union) which is a European Union directive is a mistake. [4]
- The claims that as MARMARAY is an overall project from Gebze to Halkalı, its being put into the service in sections, mainly in order to catch up with the elections, will lead to serious technical problems (for instance signalization and control center would not operate properly and invite serious collisions.) [5]
- It is claimed that due to a vertical deviation, it was demanded of the constructor company to disassemble and renew the tunnel, but instead of undertaking the expenses, the company amended the deviation with filling, and the manager of the controlling company resigned because of that. (6)
- The claims about the lack of safety wagons, the insufficiency of the newly founded security system, the lack of chances for discharging the water in the tunnel in case of any disconnection within the connectors and the fact that necessary test drives was not carried out within the framework of technical necessities. [6]
- The fact that the passangers, who walked on the line as the result of power cut, were exposed to the risk of electric shock in case of a power return. [7]

- The claim that MARMARAY was connected to the electricity network through wrong spots and the power cuts were the consequence of that error. [7]

You are a member of AdHoc Ethics Committee (an ethics committee specially founded for a subject) which is established upon the public pressure claiming that MARMARAY Project has problems regarding engineering ethics and beginning with the chief engineer responsible for the project, the engineer group who has approved the opening and the public use of the project should be ethically assessed in accordance with professional ethics codes and subjected to relevant sanctions if unethical conduct is confirmed. Please report your detailed ethical analysis based on a thorough review of the relevant facts about the subject and your proposal for the relevant sanctions, after carrying out a comprehensive research on engineering ethics codes.

Your report should address the Chair of the AdHoc Ethics Committee. The word count should not exceed 1000 words. At the end of the report please state the references you have used while preparing your report. With regard to the sanction, please analyze the ethical codes in force at the present time.

[1] <http://www.sciencedirect.com/science/article/pii/S0886779805000684?np=y>

[2] http://www.mtc-aj.com/conf_2007/2007_PP-1.pdf

[3] <http://www.demiryolu.net/marmaray/marmarayda-ilk-gunden-3-ariza-h129122.html>

[4] <http://www.demiryolu.net/marmaray/marmarayda-ariza-kaza-haberlerinin-sonu-gelmiyor-h129149.html>

[5] <http://www.odatv.com/n.php?n=bu-haliyle-acilirsa-bir-felaket-olur-2210131200>

[6] <http://www.baskahaber.org/2013/10/turk-muhendis-ve-mimar-odalar-birligi.html>

[7] <http://birgun.net/haber/marmaray-muhendisleri-faciadan-donuldu-6032.html>