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 **Engineer Ethics: Mississippi River Bridge (2007)**

In this event we have an example of what an engineer should decide to do when a problem has been found and needs immediate attention in order to prevent a possible accident. It was 1990 when the federal government indicated that the I-35W Bridge was “structurally deficient,” with extensive corrosion in its bearings. Upon hearing this warning, the officials in the state of Minnesota decided to keep repairing and patching, along with some additional inspections. They thought that everything was under control despite the warnings. In the years to follow inspectors noticed fatigue cracks and corrosion in the steel surrounding the bridge’s joints, which were repaired, and starting from 1993 annual inspections were performed. By 1995, the federal government performed another inspection in which they gave the bridge was considered again structurally deficient.

The Interstate 35 W Bridge carried 141,000 vehicles a day. It was an evening rush hour when the worst occurred; the bridge started to sway from side to side, resonating with the mighty wind until it collapsed. It was a height of approximately 60 feet from where dozens of vehicles fell on top of one of another, 13 people died, and 145 people were injured. Some of the problems identified were “insufficient bridge design firm quality control procedures for designing bridges, lack of guidance for bridge owners with regard to the placement of construction loads on bridges during repair or maintenance activities, exclusion of gusset plates in bridge load rating guidance, lack of inspection guidance for conditions of gusset plate distortion, inadequate use of technologies for accurately assessing the condition of gusset plates on deck truss bridges, and the inadequate load capacity, due to design error by Sverdrup and Parcel and Associates, Inc.” The damage started when the failure of the “gusset plates at the U10 nods.

The engineers in charge of the I-35W Bridge were offered criticism about the state of the bridge which they should have been addressed immediately as the codes of ethics indicate. The prevention of injuries was among the top priorities of the engineer, but in this case they failed to take action about the safety risks of the bridge. The engineers in this event assumed the responsibility of the collapse and therefore new measures were taken with respect to these types of accidents. In the IEEE code of ethics we find that engineers have to “accept the responsibility when an engineering decision consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment.

In this type of situations the engineer has to analyze the risks of no taking into consideration the risks of his/her decision.