Safety Corner

What is the meaning of various risk terms commonly used in engineering related safety applications?

Below is my interpretation of some terms in engineering-related safety risk assessments that are often misinterpreted or misunderstood. The term "risk" used in the context here is taken as the product of the damage and the frequency of damage.

- **Exposed group:** A defined group of individuals that would be exposed to a specific situation being analyzed in a risk assessment
- **Collective risk:** The amount of risk a defined exposed group would be subjected to
- **Individual risk:** The amount of risk a generic individual would be exposed to within a defined exposed group. This is typically used to define risk acceptance limits, and can be assessed by dividing the collective risk of a situation by the number of individuals affected over a defined time frame
- **Realised Risk**: A previously identified event or condition that has already occurred, as compared to the unrealized risk of scenarios that have not yet materialized but can occur. The sum of realized risk and unrealized risk would give the total risk
- **Residual risk:** The assessed risk of a system after putting in place of proposed controls and management actions to mitigate the risk. This also represents the risk of a system with no additional control being planned
- **Risk acceptance:** an informed decision to accept the particular risk assessed for a system
- **Risk levels**: A discrete classification of assessed risk In terms of bins or groups
- **Risk profile:** The range of risks faced by a system. In simplest form, this can be characterized by the number of hazardous scenarios within each defined risk level
- **Societal risk**: The amount of risk for a defined exposed group resulting in multiple fatalities over an accident type. Societal risk is often displayed in terms of a F-N curve, and has nothing to do with sociology or the welfare of a society

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