


Design for reliability: an application to natural gas pipelines

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Abstract: This work presents a systematics of product project for reliability. It aims at structuring a model which takes into account the concept of reliability in the project process, particularly in informational and conceptual project stages. The proposition has been applied to a mains gas project in the metropolitan area of Curitiba, Paraná, Brazil. Through its application, it was possible to highlight the importance of understanding the existing principles and correlations in the attribute reliability for the project process. In order to do so, some points have been considered: the meaning of the terms which make up the definition of reliability; the correlation with project process stages; and the way of classifying the activity to guarantee reliability along the life cycle. The work also presents information regarding the failure rate of the items used in the mains, the reliability model and the alterations recommended for the mains conceptual project, aiming to increase reliability in gas supply for consumers.

Keywords: Design for reliability, natural gas pipelines

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