



ANSI/ASSE Z590.3

A Prevention through Design Standard

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Prevention through Design Standard

NIOSH – In 2008, declared as a major initiative to

Develop and approve a broad, generic voluntary consensus standard on Prevention through Design that is aligned with international design activities and practice.



Prevention through Design Standard Action Summary

- Generic voluntary consensus standard
- American National Standards Institute (ANSI)
- Need for an ANSI accredited standards development organization



Prevention through Design Standard Action Summary

- American Society of Safety Engineers (ASSE)
- Standards Committee approval
- First, a Technical Report: Then, an ANSI Standard



Prevention through Design Standard Action Summary

- November 2009 – ASSE Technical Report
- ASSE: August 2010 – ANSI standard draft sent out for Canvass Group review and balloting



Prevention through Design Standard Action Summary

- All of the technical and procedural work necessary to satisfy ANSI requirements was completed by July 29, 2011
- Paperwork was submitted to ANSI for approval of the standard early in the week commencing August 1, 2011



Prevention through Design Standard

ANSI/ASSE Z590.3: Prevention through Design

Guidelines for Addressing Occupational Hazards and Risks in the Design and Redesign Processes



Prevention through Design Standard

- Scope, Purpose and Application
- Referenced and Related Standards
- Definitions
- Roles and Responsibilities
- Relationships With Suppliers
- Design Safety Reviews



Prevention through Design Standard

- The Hazard Analysis and Risk Assessment Process
- Hazard Analysis and Risk Assessment Techniques
- Hierarchy of Controls
- Ten Addenda – Half of the text



Acceptable Risk

The Goal to Be Achieved

- Zero risk levels are not attainable
- The necessity to give designers and safety professionals a practicable and workable definition as a goal
- Consensus was achieved



Acceptable Risk

The Goal to Be Achieved

Acceptable risk is that risk for which the probability of a hazard-related incident or exposure occurring and the severity of harm that may result are as low as reasonably practicable in the setting being considered.



ALARP

That level of risk which can be further lowered only by an increase in resource expenditure that is disproportionate in relation to the resulting decrease in risk.



Paper — Acceptable Risk

- Resources are always limited
- “The opportunity costs would be better spent on other more pressing matters.”



Paper — Acceptable Risk

- An example – how a risk assessment group decided that rather than spend money to reduce a low risk a notch lower, they would rather have a wellness center



Worldwide Activity Promoting Risk Assessments

- An eruption of activity requiring or promoting hazard identification and analysis and risk assessments as elements within a safety management system



Significance of the Activity Related To Z590.3

- Hazards and risks are more effectively and economically addressed in the design and redesign processes



Significance of the Activity Related To Z590.3

- Hazard identification and analysis and making risk assessments throughout the design and redesign processes repeated as necessary, are the core of Prevention through Design



Transitions

Human Error Symposium

- Speakers: cognitive theory, the properties of human cognition, variable errors and constant errors, imperfect rationality, and mental behavioral aspects of human error.



Transitions

Human Error Symposium

- Solutions proposed by the big hitters. to reduce human error were, first, identify and analyze the hazards and assess the risks in the work system and in the organization of work.



Transitions

Human Error Symposium

- Managers may wish to address human error by “getting into the heads” of their employees. Training is often the default corrective action, and that is not effective if error potential is **designed** into the work.



Transitions

Human Error Symposium

- When errors occur, they expose weaknesses in the defenses **designed** into systems, processes, procedures, and the culture.



Transitions

Human Error Symposium

- It is management's responsibility to anticipate errors and to have systems and work methods **designed** so as to reduce error potential and to minimize severity of injury potential when errors occur.



Z590.3

Recognition of the staff at NIOSH who proposed that a Prevention through Design Standard Be Developed

The standard is a timely resource for for those whose purpose is to reduce occupational injuries and illnesses



Premise: All Encompassing

The entirety of purpose of those responsible for safety, regardless of their titles, is to manage with respect to hazards so that the risks deriving from those hazards are acceptable.