

Dr. Nancy Beck
Office of Information and Regulatory Affairs
Office of Management and Budget
725 17th Street, N.W.
New Executive Office Building, Room 10201
Washington, DC, 20503

Dear Dr. Beck:

The Government Electronics and Information Technology Association (GEIA) G-48 System Safety Committee reviewed the subject OMB Proposed Risk Assessment Bulletin. Our comments are provided below and in the attached file. If you have any questions, my contact information is provided below, as instructed in the bulletin.

Name: David B. West, PE, CSP, CHMM
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**Comments from the
Government Electronics and Information Technology Association (GEIA)
G-48 System Safety Committee
on the
OMB Proposed Risk Assessment Bulletin
14 June 2006**

[Comment numbering format facilitates internal identification of G-48 commenter.]

SJ1. Introduction, paragraph 5, 3rd sentence. Recommend changing the word “inform” to “influence” so the sentence reads as follows: “Moreover, a risk assessment prepared by one federal agency may influence the policy decisions of another federal agency, or a risk assessment prepared by one or more federal agencies may influence decisions made by legislators or the judiciary.”

SJ2. Use of Risk Assessments, *Priority Setting Section*, paragraph 1. Recommend adding a statement that the Department of Defense uses Risk Assessment as a tool to set priorities for making design decisions and changes to weapon systems to give a broader perspective to the use of risk assessments.

SJ3. Use of Risk Assessments, *Informing Risk Management Decisions Section*, paragraph 1. Recommend that first sentence be changed to “Often, a risk assessment is conducted to help determine whether to eliminate or reduce risk and, if so, to establish the appropriate level of stringency.” It is important to make elimination of risk an option.

SJ4. Types of Risk Assessments, *Failure Analysis of Physical Structures Section*. Recommend adding “Equipment” to the title of this section to broaden the use of risk assessment. This section should discuss more than just facilities (e.g., airplanes, space vehicles).

WB1. Recommend clarification on how the bulletin aligns with the system safety risk assessments performed per MIL-STD-882. It does not appear that the risk assessment work done under MIL-STD-882 is within this scope.

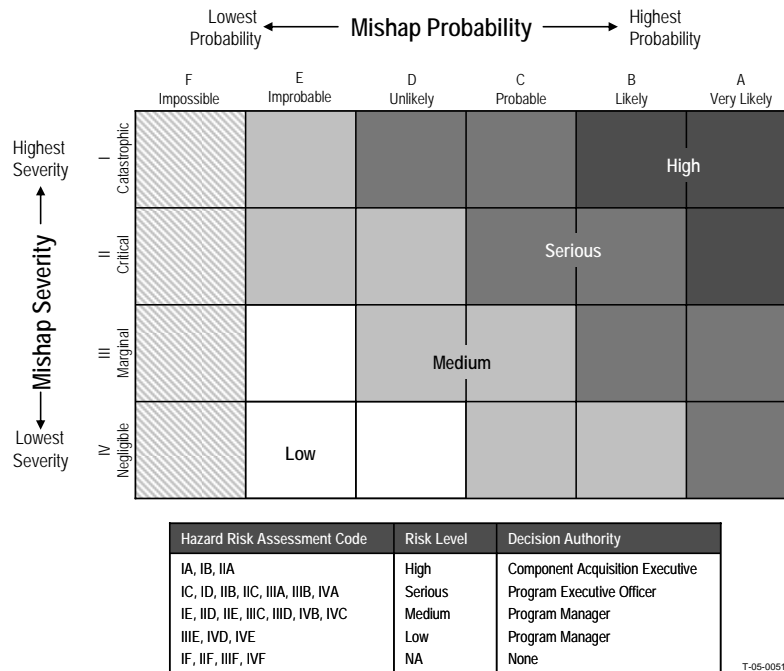
TY1. Recommend adding a table of contents.

JL1. Recommend addition of a model or matrix along with a description of the purpose of a risk matrix, see example below.

Mishap risk assessment matrices are used to assess risks and also to determine who should accept risks. They may also serve as a useful tool to combine the individual risks into a total system risk for the system. With this in mind, a well-designed mishap risk assessment matrix will have the following features:

- a. Mishap risk assessment matrices should be tailored to each system or class of systems based on the expected range of severity of potential mishaps and the range of probability or frequency of these mishaps.

- b. Orient the severity and probability (or frequency) axes so that one axis increases upward and the other increases to the right in accordance with the Cartesian coordinate system. Since René Descartes first developed this system in 1637, mathematicians, scientists and engineers have been trained to use this graphical orientation of data. It greatly reduces confusion to orient the axes in this way.
- c. Use logarithmic scales on each axis with logical and proportional ranges for mishap severity categories and mishap probability categories. This assures the risk, which is a product of probability and severity, will also be proportional.
- d. Assign the four levels of decision authority for risk acceptance from DoDI 5000.2 (high, serious, medium, low) to each cell of the matrix. Bear in mind that if the first three features described above are in place, a cell will have the same level of risk as the cell diagonally up and to the left, and the cell diagonally down and to the right.



SH1. Recommend providing guidance on when waivers are applicable. The bulletin sets a high standard for data acquisition and consideration of ranges of opinion that is waiveable at agency discretion. Considering the breadth of assessments the federal government does, such waiver latitude is necessary, but somewhat uncomfortable.

SH2. Recommend the addition of technical guidance to strengthen document. The Summary states the bulletin issues technical guidance; however, most technical decisions were left entirely to the discretion of the assessing agency.

HS1. Some of the bulletin's proposed standards are inconsistent with those of NASA's or have limited applicability to NASA's risk assessment projects. Examples:

Definition of risk – NASA PRA procedures guide defines risk as a set of triplets; scenarios; probabilities (or frequencies) and associated uncertainties; and adverse consequences and associated uncertainties. The Bulletin defines risk in terms of frequencies and consequences.

Uncertainty characterization – In PRAs, uncertainties are characterized using probability distributions and if this is not feasible then sensitivity analyses are performed. The bulletin's proposed approach is reversed to what is done in PRAs. The bulletin states "When the model used by assessors is well established, the central or expected estimate may be computed using classical statistics." Whether classical or Bayesian statistics is used does not depend on the establishment of the model.

PC1. Add several of the classical texts on risk assessment and risk acceptance as references. Suggestions:

- **Of Acceptable Risk** — William W. Lowrance. A useful primer, written in the language of the layman, with numerous real-life case histories presented to reinforce concepts. — 1976 — William Kaufman, Inc.; Hard cover; 180 pp. (ISBN 0-913232-30-0)
- **An Anatomy of Risk** — William D. Rowe. A profound, sweepingly broad, deeply technical treatment of the topic. — 1977 — John Wiley & Sons; Hard cover; 488 pp. (ISBN 0-471-01994-1)
- **Societal Risk Assessment** — R. C. Schwing and W. A. Albers, Jr. An edited compendium of contributions dealing with risk perception and acceptability, with emphasis on societal perspectives. — 1980 — Plenum Publishing Corp.; Hard cover; 374 pp. (ISBN 0-306-40554-7)