

U.S. Safety Goals

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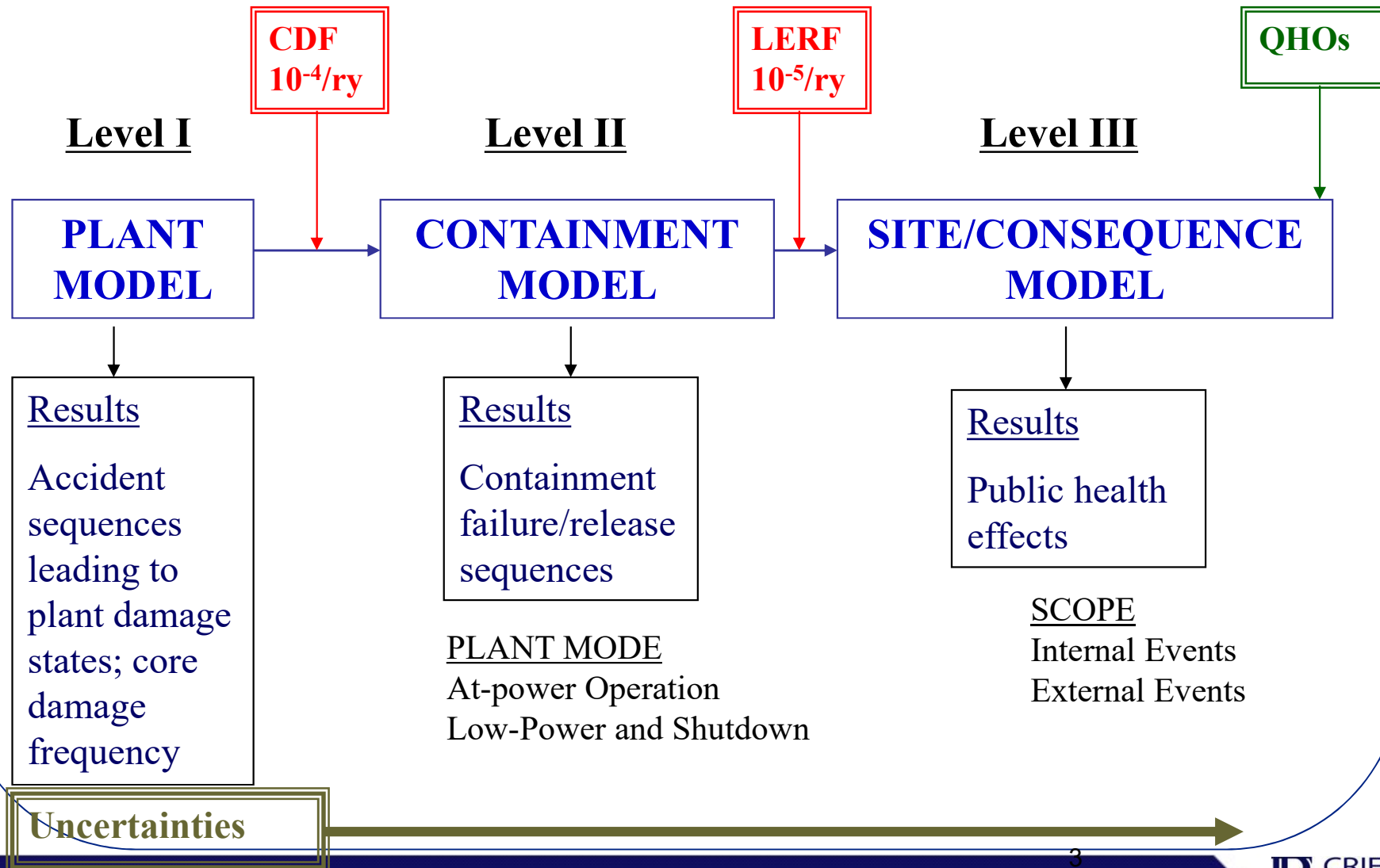
<http://criepi.denken.or.jp/en/nrrc/index.html>

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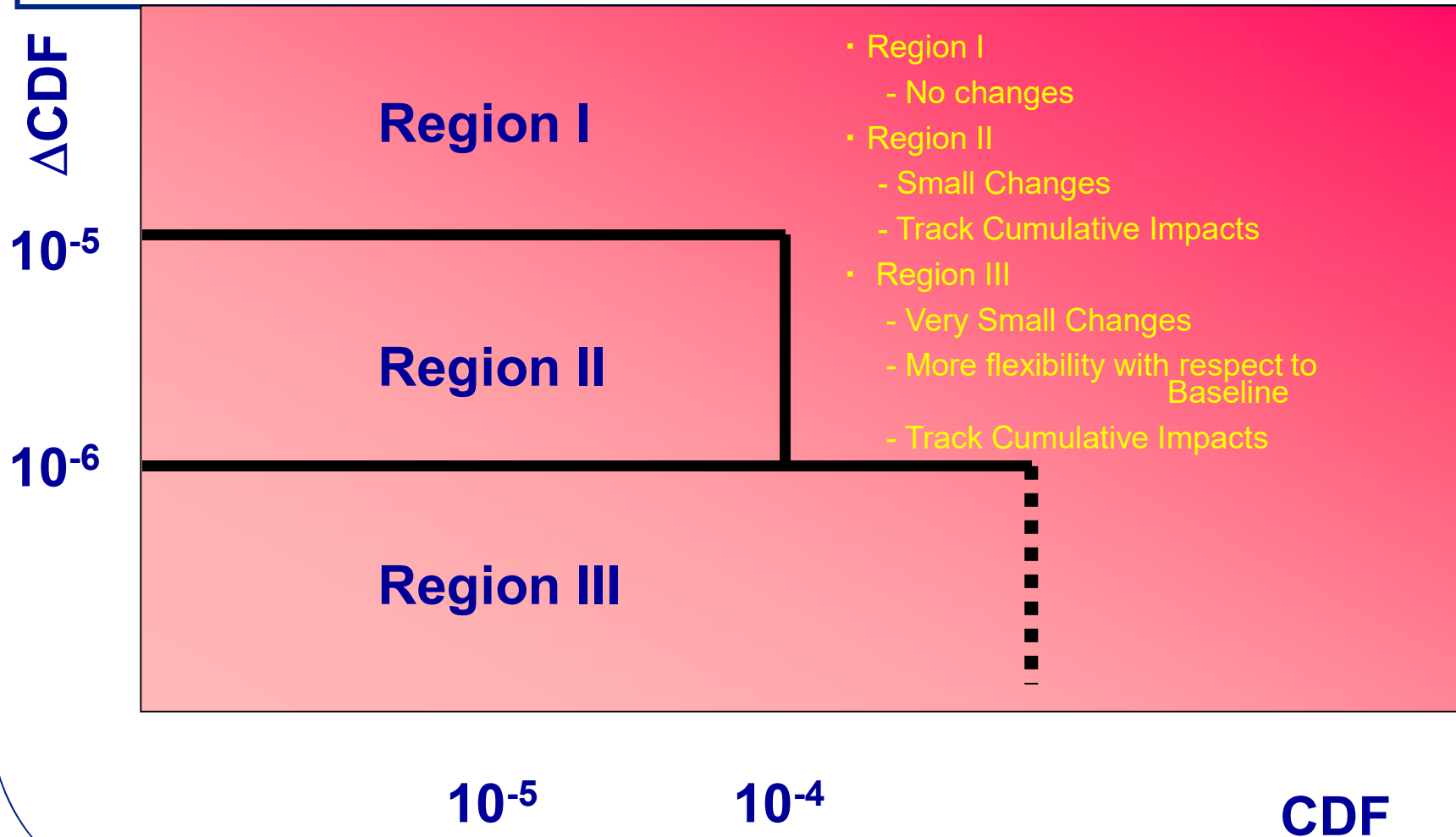
U.S. Quantitative Health Objectives

- **Prompt fatality: 0.1% of all prompt fatalities**
- **Cancer fatality: 0.1% of all cancer fatalities**
- **Because of the uncertainties, the QHOs are not practical.**
 - **Subsidiary objectives are introduced.**

PRA Model Overview and Subsidiary Objectives



Risk-Informed Changes to the Licensing Basis (RG 1.174)



Acceptance Guidelines for Core Damage Frequency

10.CFR 50.109 Backfitting

- **Backfitting is defined as the modification of or addition to systems, structures, components, or design of a facility; ...**
- **The Commission shall require the backfitting of a facility only when it determines that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection.**

CDF Screening

Estimated CDF Reduction	NRC Staff Action
$>10^{-4}$ per reactor year	Proceed with the regulatory analysis on a high-priority basis.
10^{-4} - 10^{-5} per reactor year	The decision whether to proceed with the regulatory analysis is to be made by the responsible division director.
$<10^{-5}$ per reactor year	Terminate further analysis unless the office director decides otherwise, based upon strong engineering or qualitative justification.

My Views on Multiunit Sites

- **The Qualitative Health Objectives are a statement of the societal acceptability of NPP risks.**
- **They should be met including all hazards at the site.**
- **CDF and LERF (or similar metrics) balance accident prevention and mitigation for any given site (defense-in-depth).**
- **LERF or any other metric of release should be a site goal.**
- **CDF should still be per reactor year.**