

EPRI HLW Project Objectives

- To develop an integrated methodology for early site performance assessment and to identify and prioritize crucial issues
- To involve DOE in this methodology development and its implementation

EPRI/NPD

EPRI High Level Waste Project

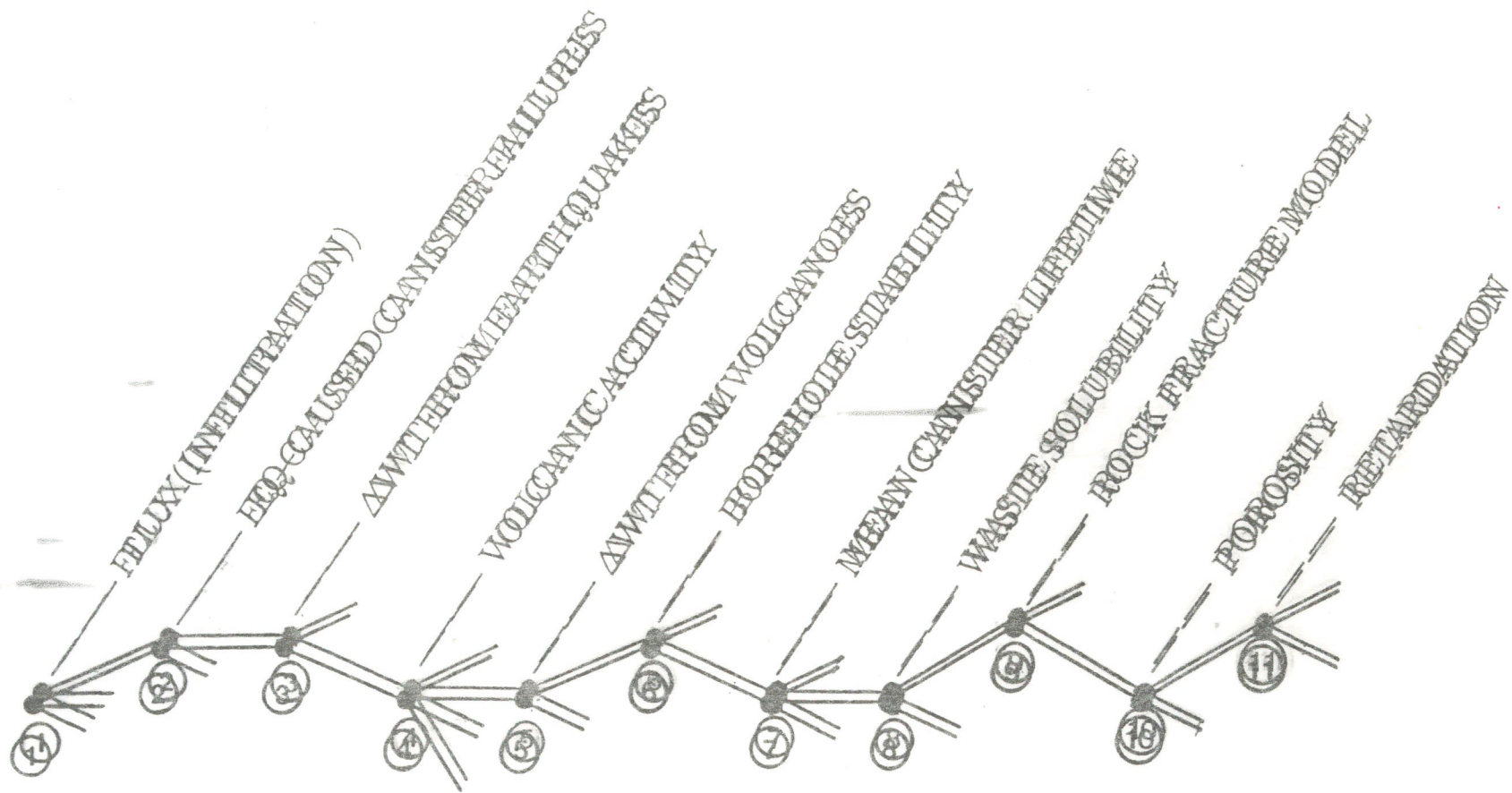
Methodology Development Team

<u>Name</u>	<u>Affiliation</u>	<u>Expertise</u>
Daniel B. Bullen	Georgia Tech	Waste Package
Neville Cook	Univ. of Calif, Berkeley	Rock Mechanics
Kevin Coppersmith	Geomatrix Consultants	Seismic Geology
Ralph L. Keeney	Univ. of Southern California	Risk/Decision Analysis
John M. Kemeny	University of Arizona	Rock Mechanics
Austin Long	University of Arizona	Climatology
Robin K. McGuire	Risk Engineering	Risk Analysis
F. Joseph Pearson, Jr.	Consultant	Geochemistry
Frank W. Schwartz	Ohio State University	Hydrology
Michael Sheridan	State Univ. of NY, Buffalo	Volcanology
Robert A. Shaw	EPRI	Project Manager
J. Carl Stepp	EPRI	Seismology & Geophysics
Robert F. Williams	EPRI	HLW Sciences
Robert Youngs	Geomatrix Consultants	Geotechnical Engineering
Delbert S. Barth	UNLV/ERC	Observer
Russ Dyer	Department of Energy	Observer

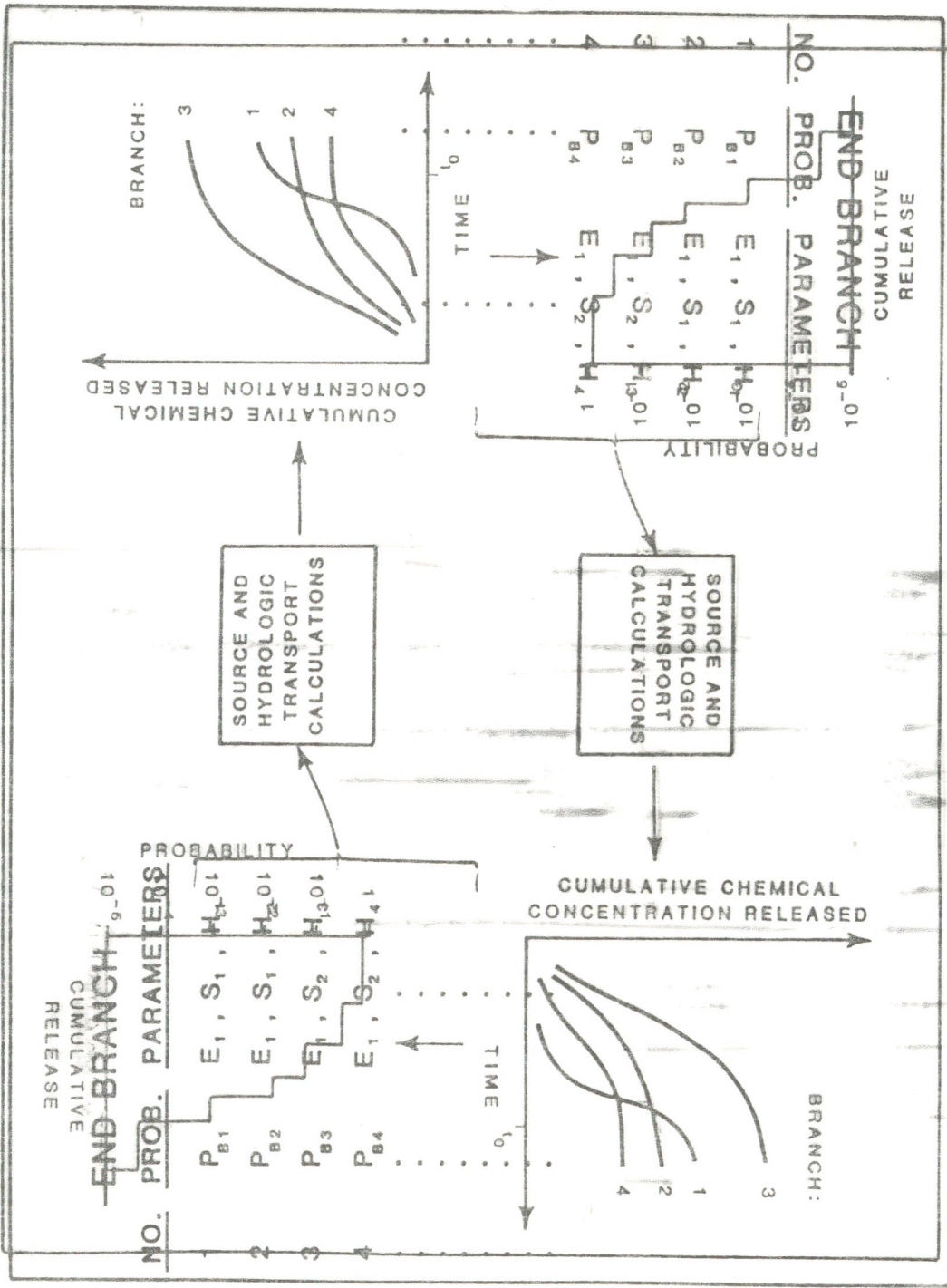
HLW / SFS

Methodology Development Team Meetings

7/24-25/89	Brainstorming
11/28/89	Qualification check
12/19-20/89	Problem definition
1/15-17/90	Model formulation
4/24-26/90	Model presentation
7/30-8/1/90	Model completion



EQ = EARTHQUAKE
 ΔWTF = CHANGE IN WATER TABLE



^{135}Cs

1022 BRANCH FULL CASE

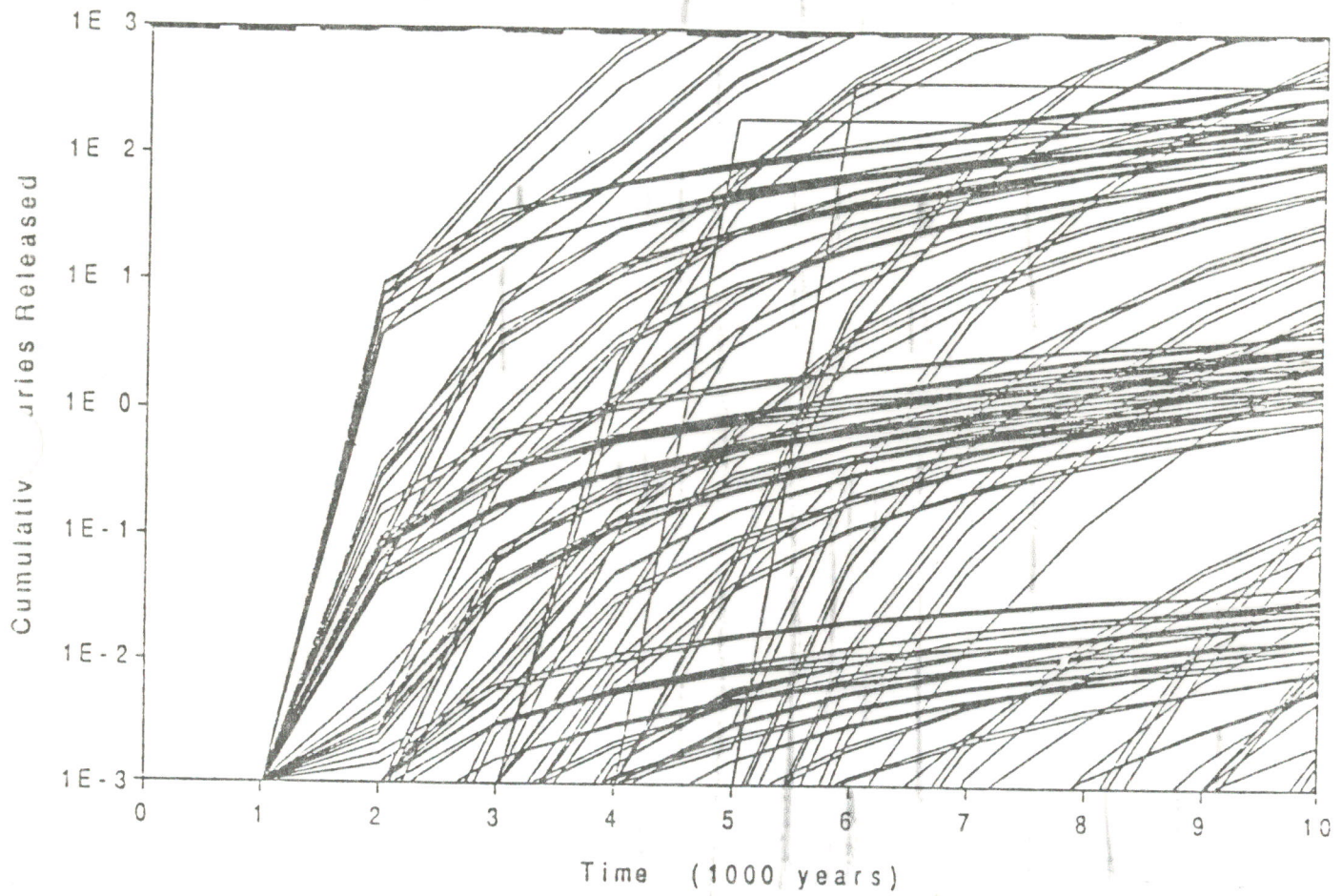
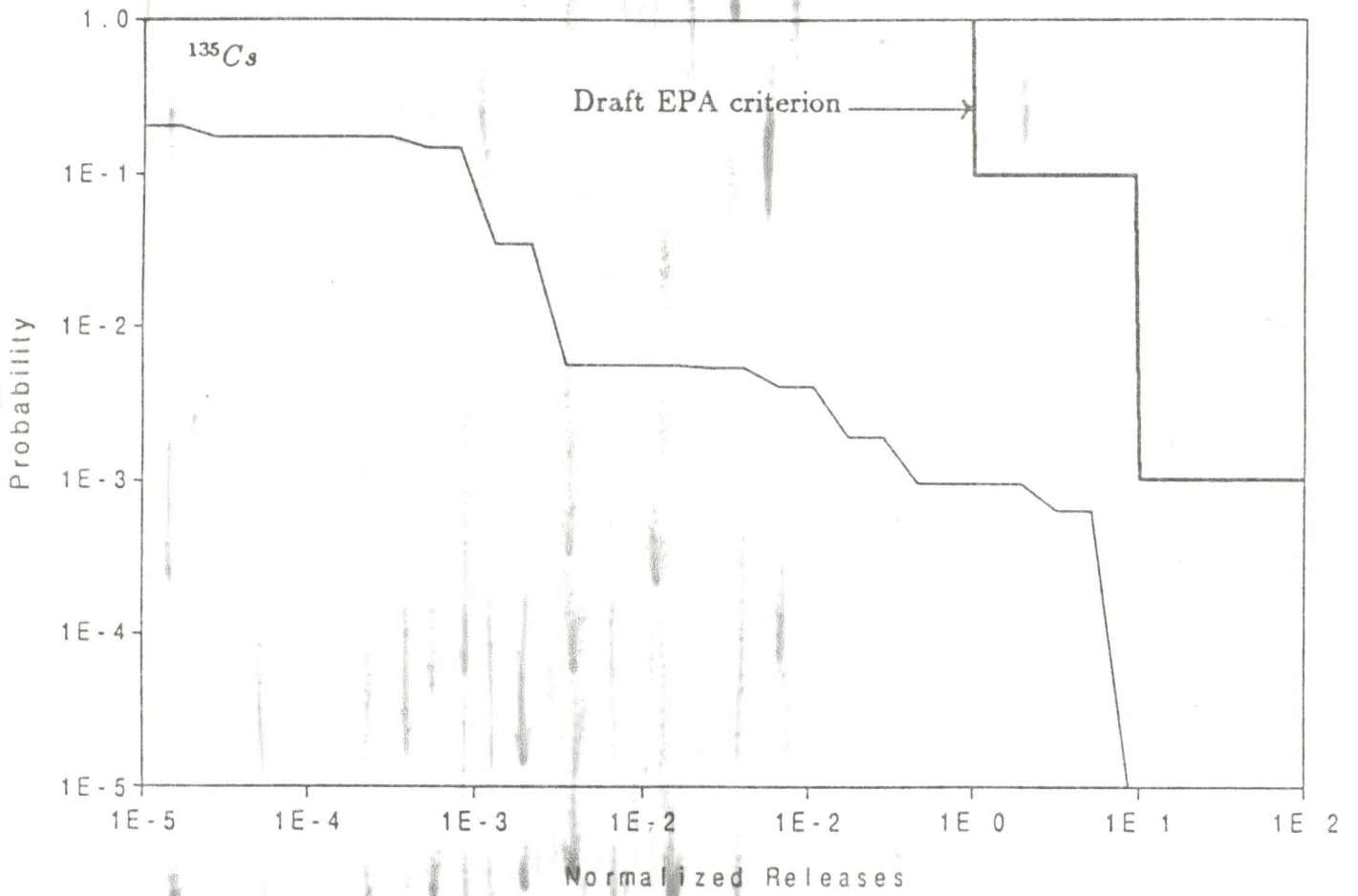


Figure 10-2. Cumulative curies released vs. time for 10,000 years.

COMPLEMENTARY CUMULATIVE DISTRIBUTION FUNCTION



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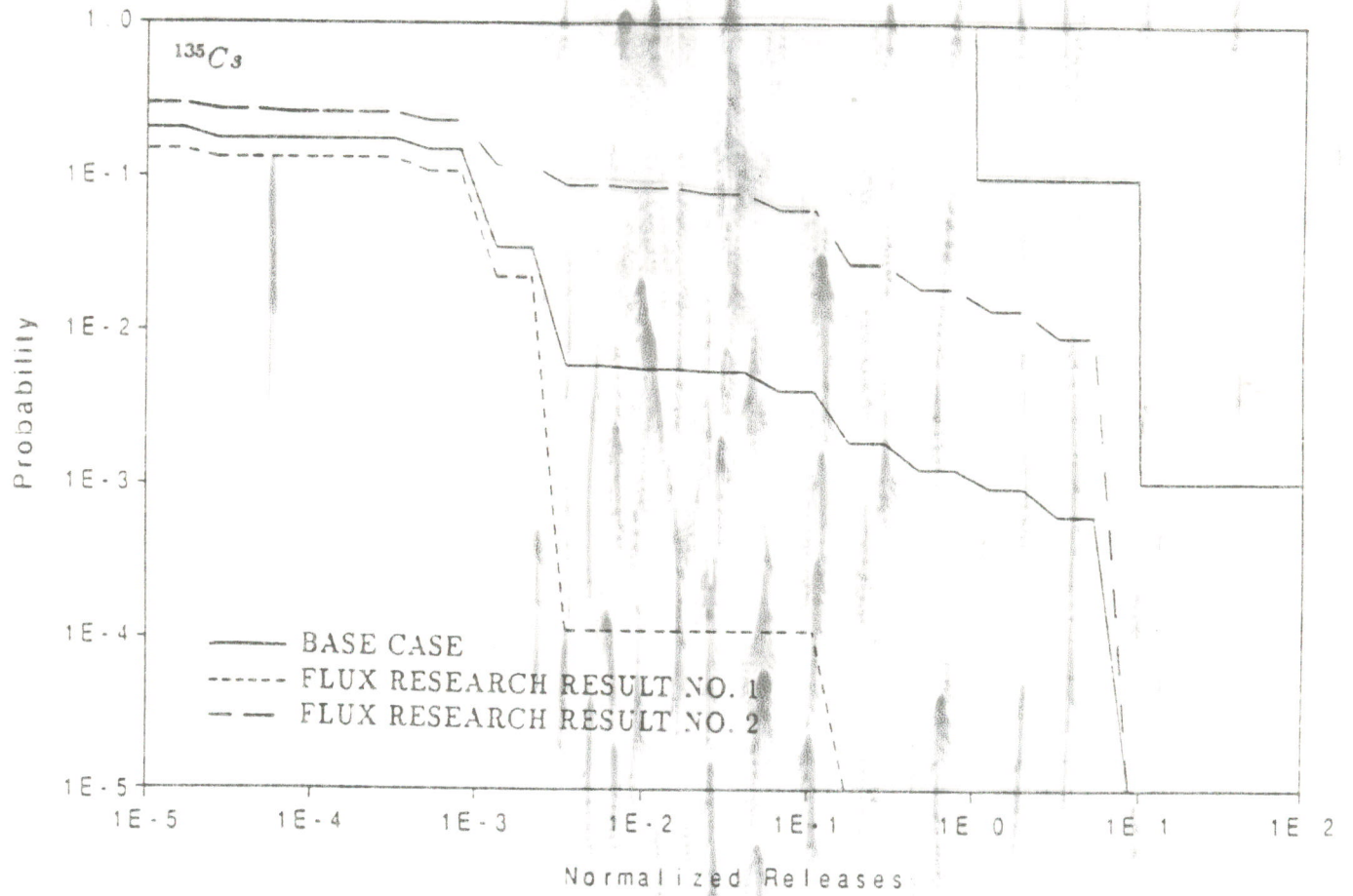


Figure 10-20. CCDF showing sensitivity to research on flux levels.

Conclusions

The use of multi-disciplinary scientific and engineering expertise to conduct a risk-based evaluation of a HLW repository is achievable with current knowledge and technology.

- A structured approach is required; the workshop format is suited to this approach.
- The use of logic trees is a convenient and credible format
- Results of the methodology should be obtained during the process of model development, i.e., the process should be iterative.

A methodology of this type can be applied on a larger scale, in which a larger body of expertise participates. This application will lead to realistic (rather than simple demonstrative) results.