

**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD**

**SUBJECT: CALICO HILLS RISK/BENEFIT
ANALYSIS - SUMMARY OF THE
MODEL RESULTS**

PRESENTER: HOLLIS CALL

**PRESENTER'S TITLE
AND ORGANIZATION: PRINCIPAL DECISION ANALYST,
APPLIED DECISION ANALYSIS, INC.**

**PRESENTER'S
TELEPHONE NUMBER: (415) 854-7101**

JULY 24-25, 1990

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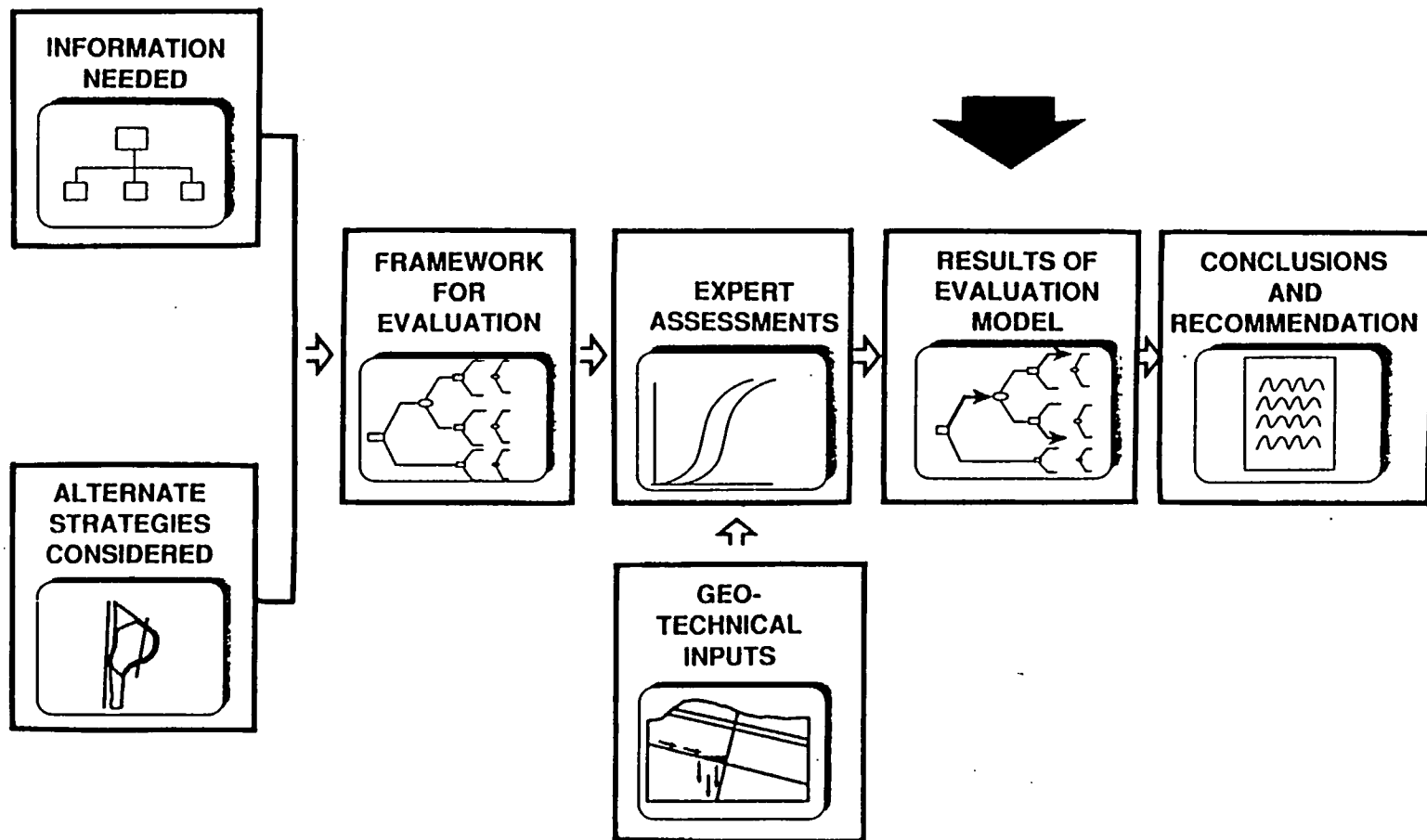
PRESENTER: HOLLIS CALL

**PRESENTER'S TITLE
AND ORGANIZATION: PRINCIPAL DECISION ANALYST,
APPLIED DECISION ANALYSIS, INC.**

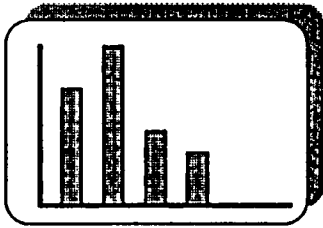
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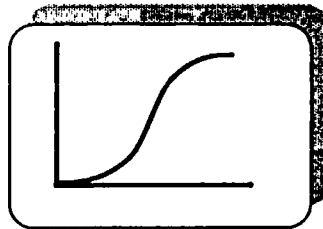
STRUCTURE OF THE CALICO HILLS RISK/BENEFIT PRESENTATION



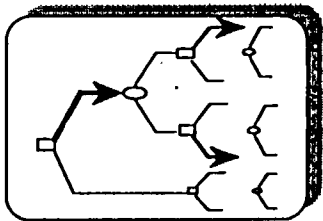
SEVERAL MODEL OUTPUTS ARE GENERATED



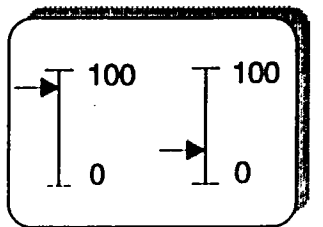
EVENT PROBABILITIES



RELEASE DISTRIBUTIONS



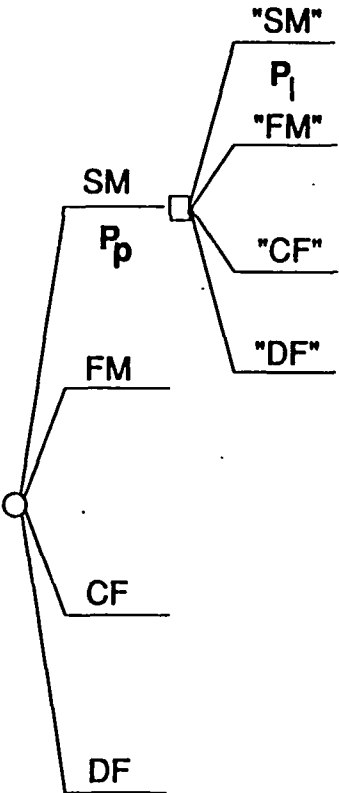
OPTIMAL POLICY



CONSEQUENCES

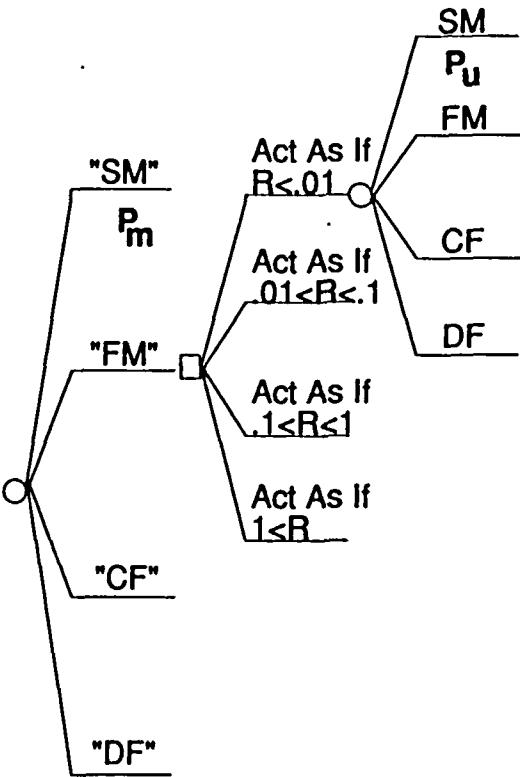
EVENT PROBABILITIES

"Nature's" Tree



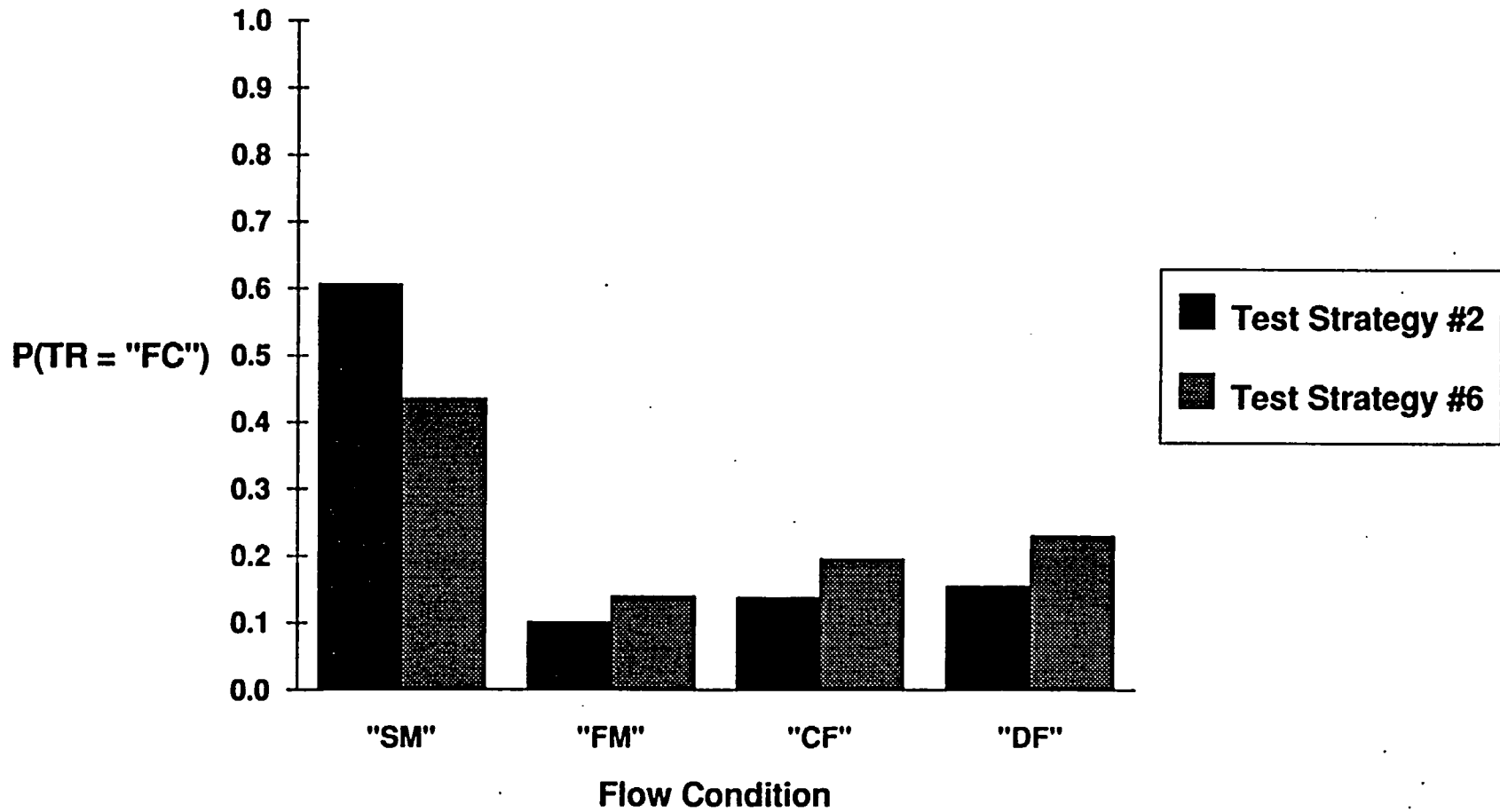
TRUE CONDITIONS TEST RESULTS

"Your" Tree

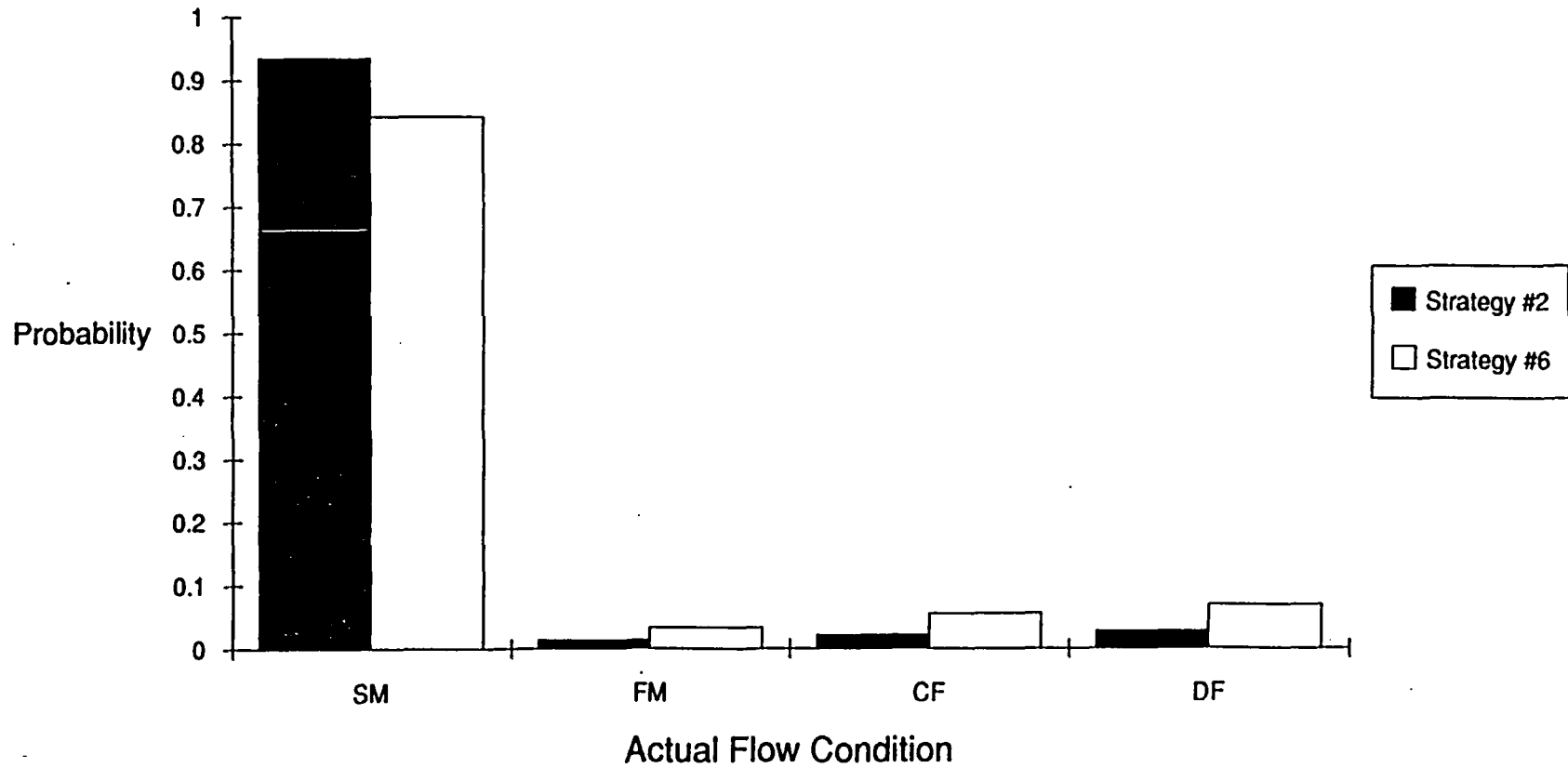


TEST RESULTS DECISION TRUE CONDITIONS

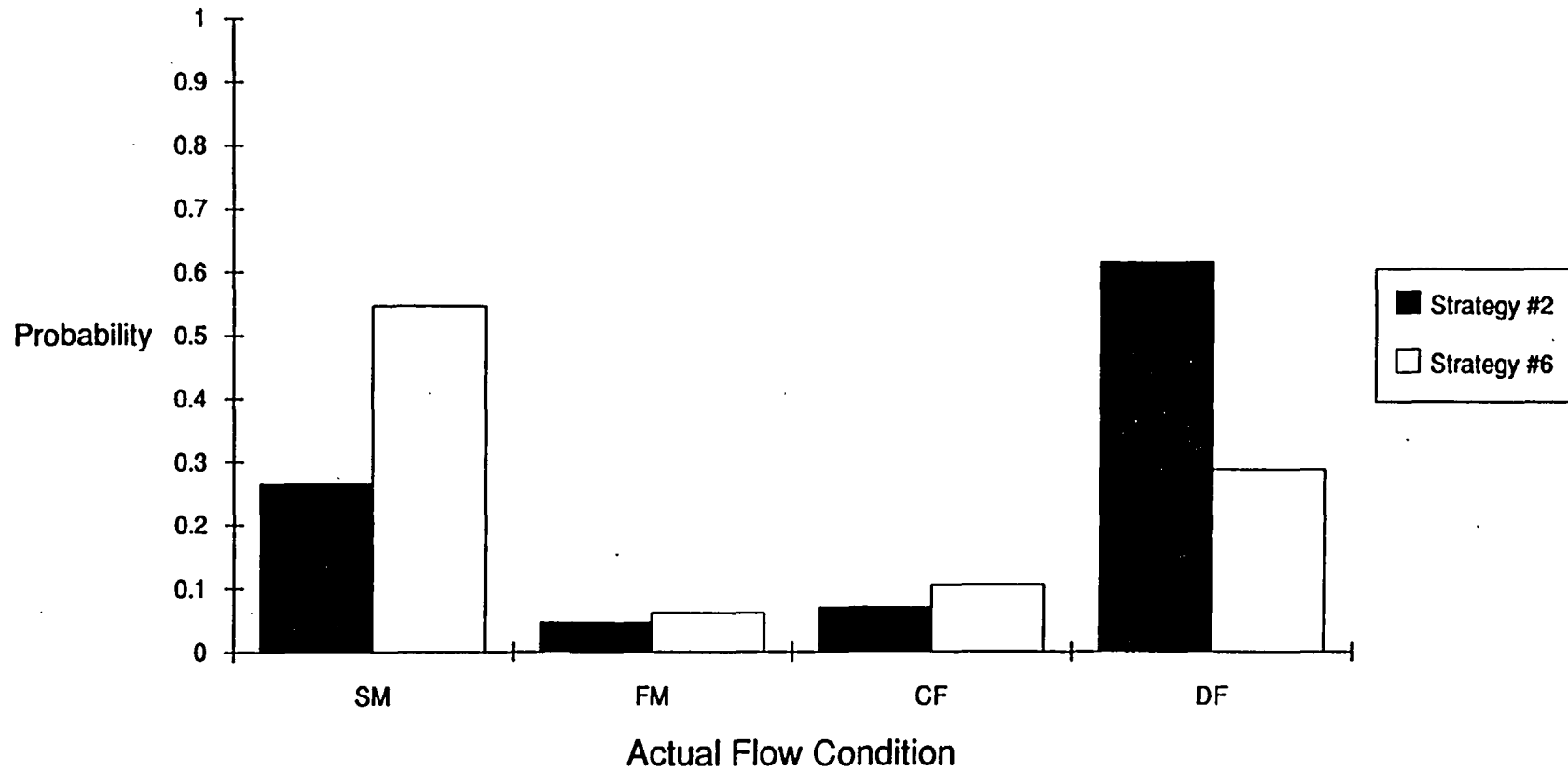
Probability of Test Outcomes for Strategies #2 and #6



Updated Probabilities of Flow Conditions given Test Result = "SM"

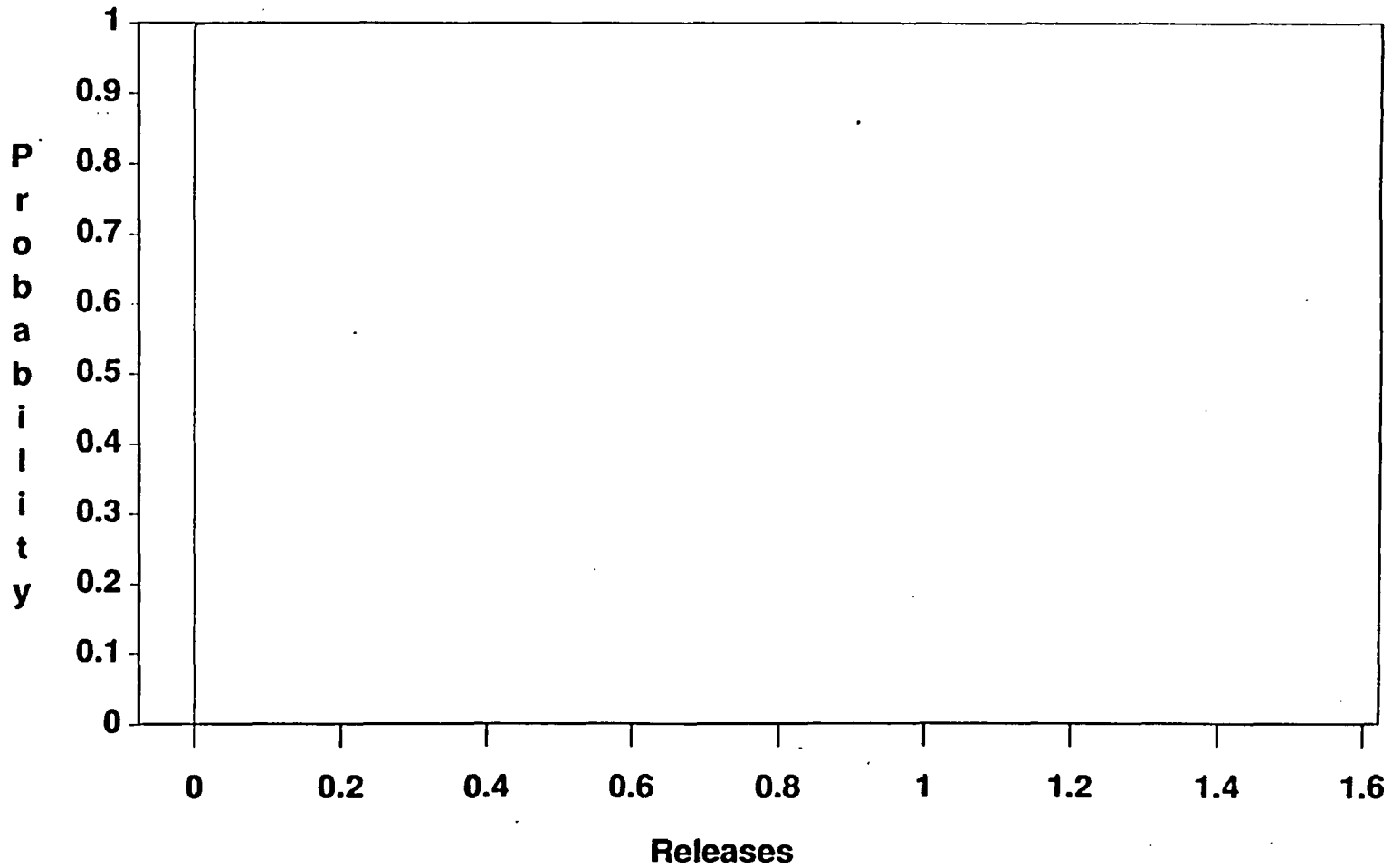


Updated Probabilities of Flow Conditions given Test Result = "DF"



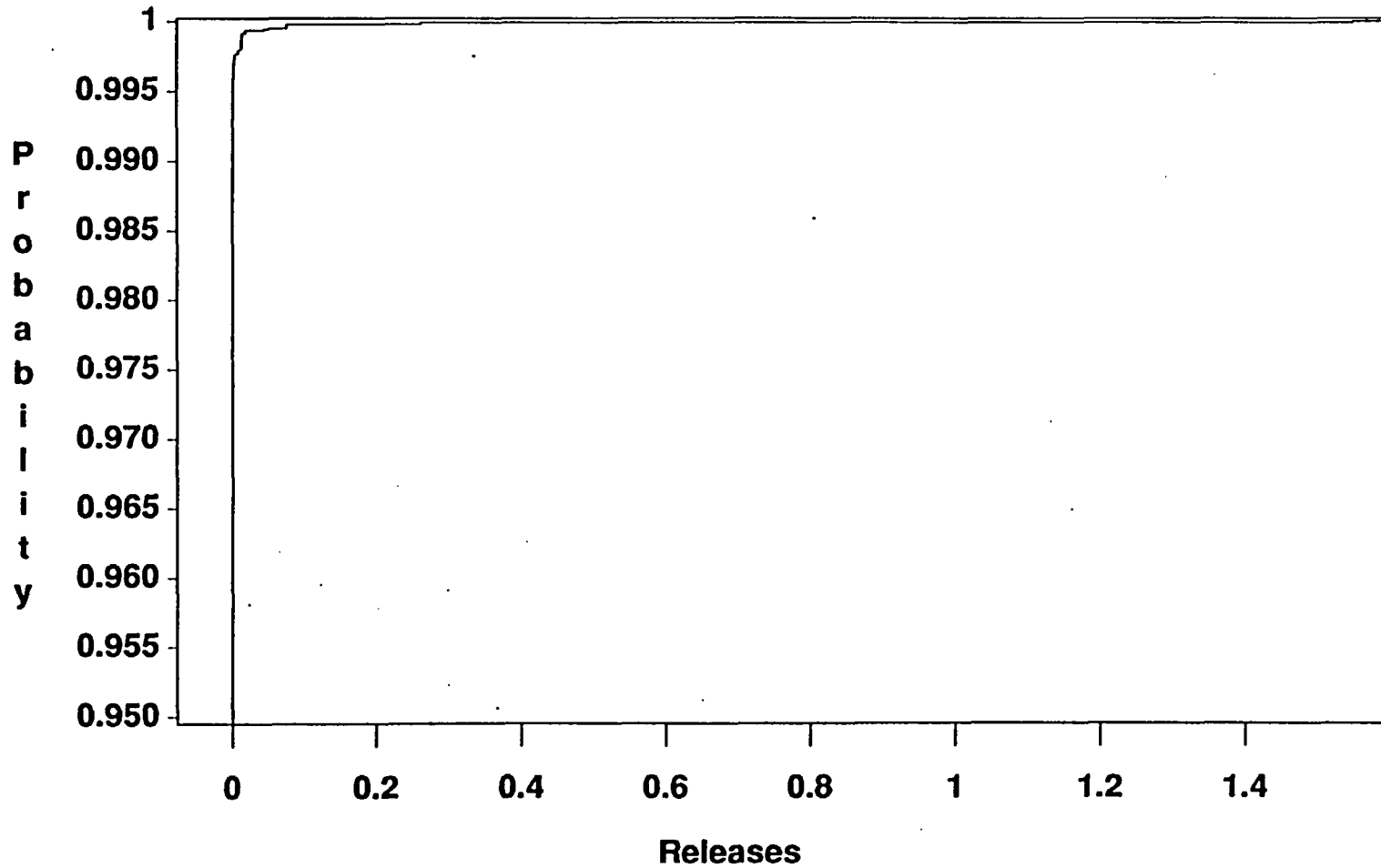
Cumulative Distribution on Releases to AE

No Testing



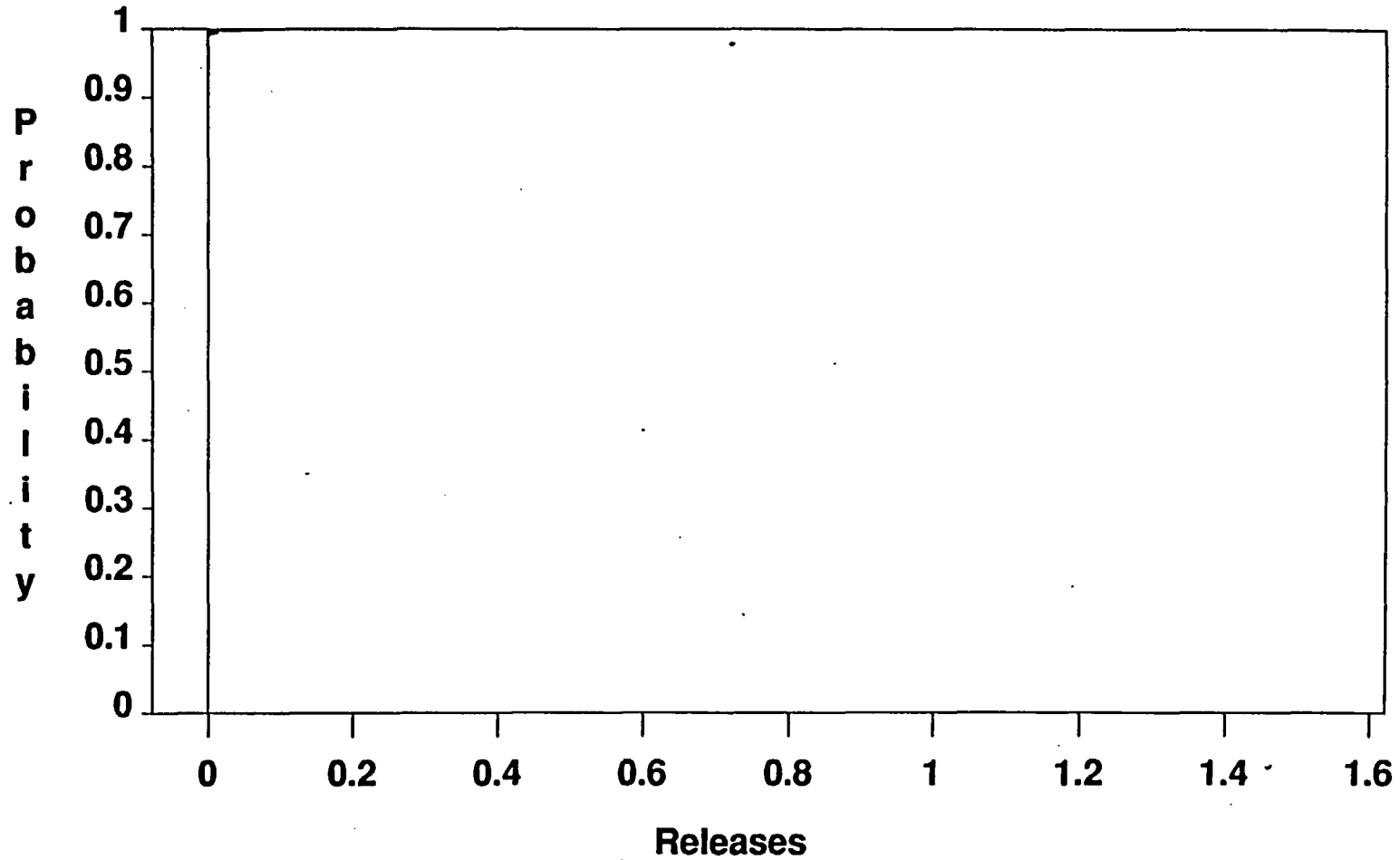
Cumulative Distribution on Releases to AE

No Testing



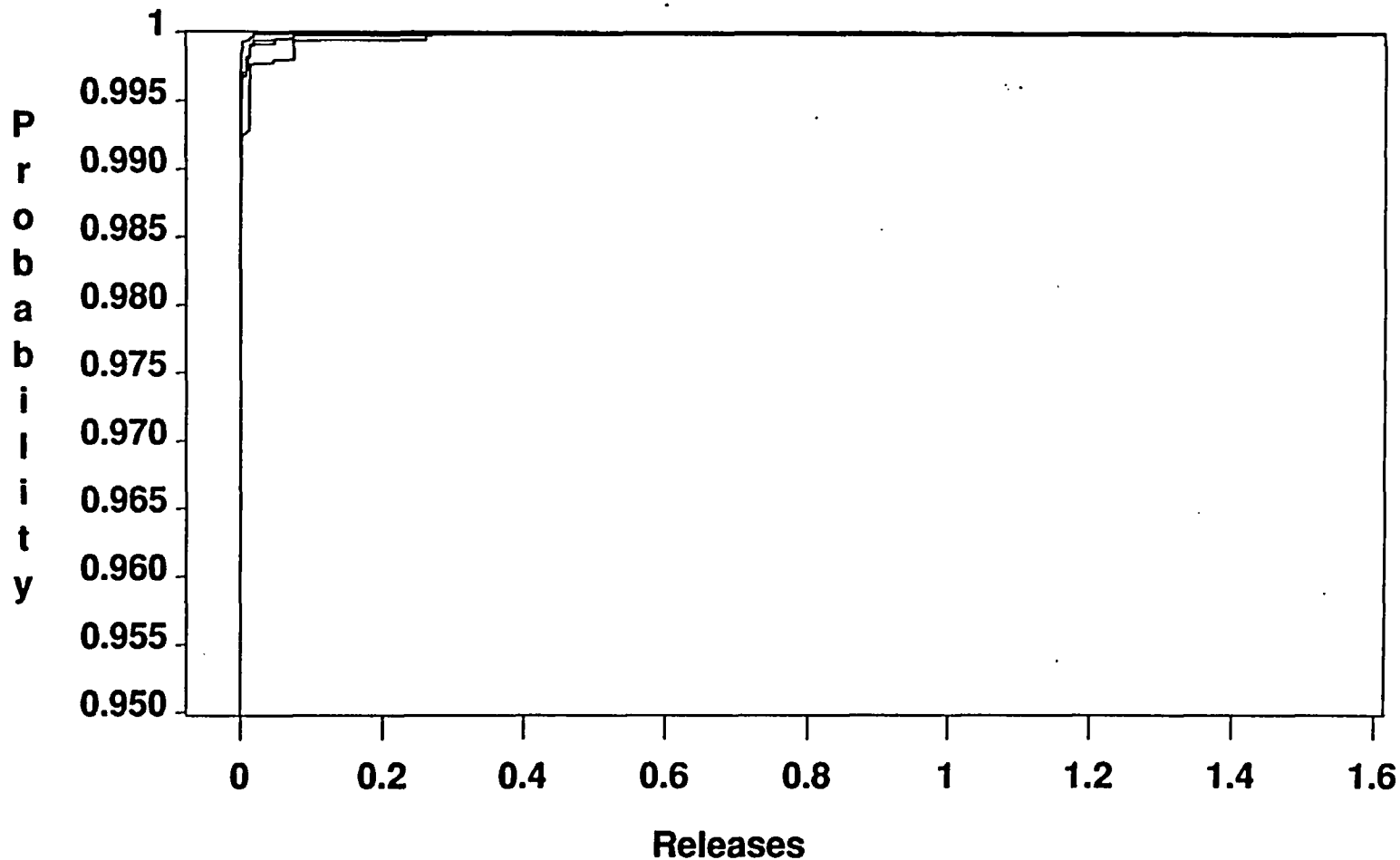
Cumulative Distribution on Releases to AE

Test Strategy #2



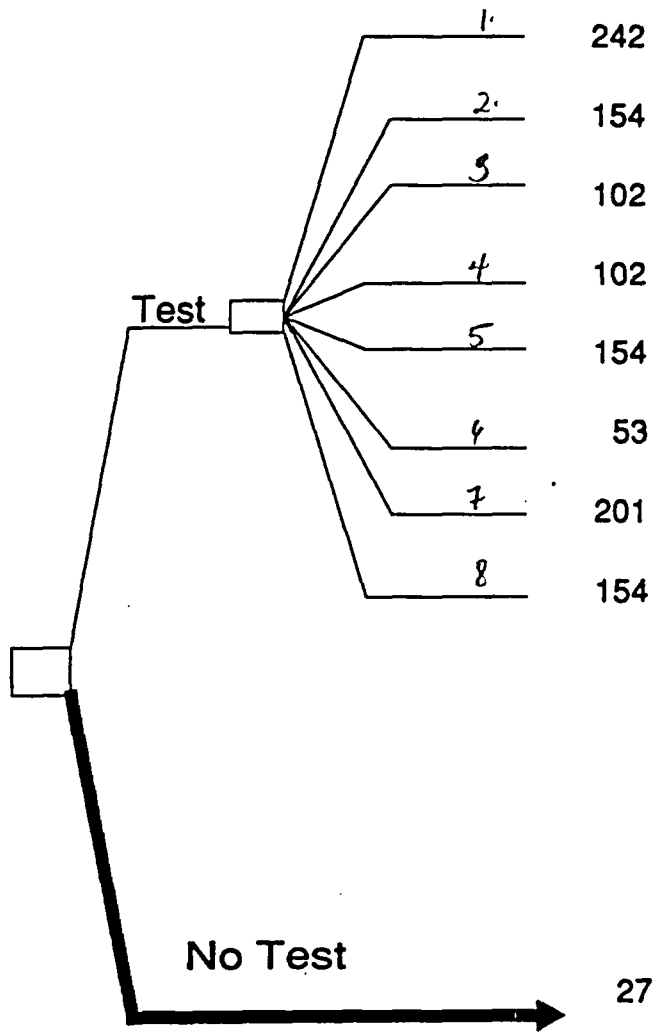
Cumulative Distribution on Releases to AE

Test Strategy #2



EXPECTED VALUE OF TESTING STRATEGIES

(\$MILLION)



WHY NO TESTING? INTERPRETATION OF RESULTS

- **EXPECTED RELEASES ARE VERY LOW (ORDERS OF MAGNITUDE BELOW THE EPA STANDARD), AND TEST RESULTS ARE NOT LIKELY TO CHANGE THAT VIEW**
- **TEST COSTS ARE RELATIVELY HIGH; CHEAPER, INCREMENTAL, OR PHASED TESTS MIGHT BE OPTIMAL**
- **A PREFERENCE FOR TESTING SUGGESTS ONE OR BOTH OF THE FOLLOWING:**
 - **DECISION MAKERS PLACE HIGH VALUE ON HIGH CONFIDENCE, EVEN AT EXTREMELY LOW LEVELS OF RELEASES (1.0E-8). WE DID NOT OBSERVE THIS LEVEL OF SENSITIVITY IN OUR ASSESSMENT**
 - **THERE IS A VALUE TO TESTING NOT CAPTURED VERY WELL BY THIS MODEL**