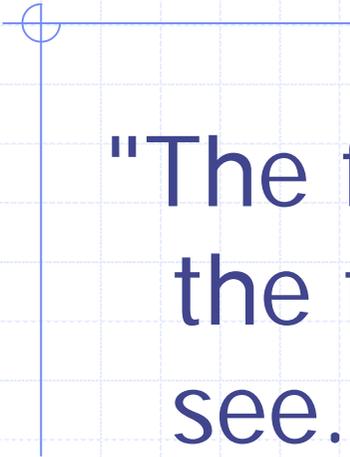


"Please God, Let it Rain *Hard*"

Eastman's Aniline Plant Explosion
October 4, 1960



"The farther back one can look,
the farther forward one can
see."

--Winston Churchill

Those Who Were Killed

Andrew Chadwell

Jess R. Shell

Usif Haney

Manze Powers

J. D. Byington

Carl Cox

B. C. Arnold

Carl Cochran

J. W. Sanders

Cornelius Depew

Arthur H. Stevens

John Squibb

E. O. Repass

I. D. Mullins

James W. Sage

U. W. Munsey



TUNNABLE

EMERGENCY VEHICLE ENTRANCE
ALL TRAFFIC STOP
WHEN LIGHTS ARE FLASHING



PRIVATE

PLEASE
USE WAITING ROOM
EXCEPT WHILE
CONDUCTING BUSINESS

NO SMOKING







1/18/00





Building 207, taken on December 26, 1957



Plant Map from
1960, showing
Bldg 207



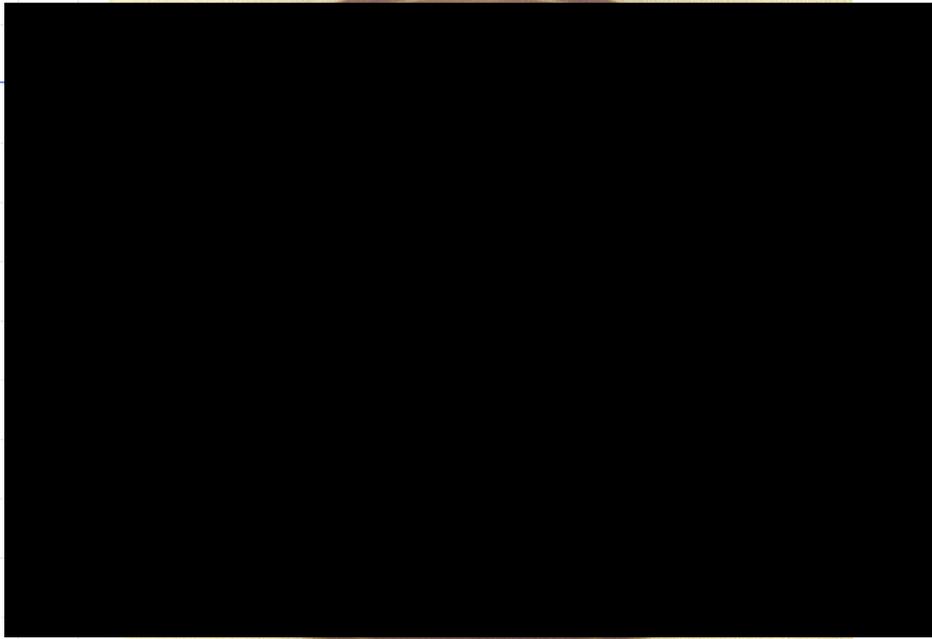
[Aniline Explosion.mpg](#)



CLOCK OVER EAST DOOR
BLDG 18 on plant master
clock system

photo by Fire Chief, C.O. Richardson

[Aniline Explosion.mpg](#)



Click on the movie clip
to play the movie (90
seconds).

CHECK OVER EAST DOOR
BHDG 18 on plant master
clock system

photo by Fire Chief, C.O. Richardson



Always Work Safely

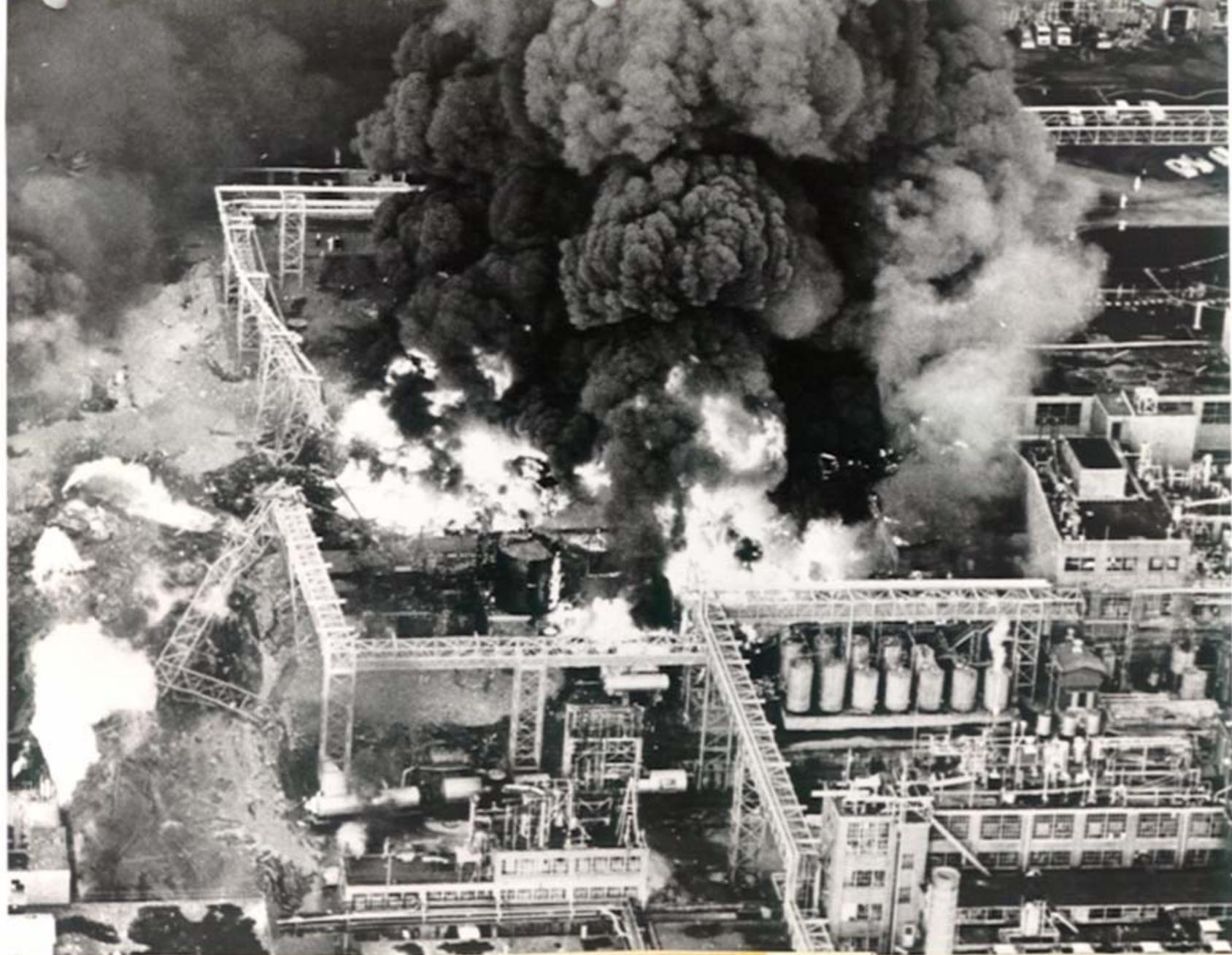
A Few Important Rules to Guide You



Aniline, an important raw material, is produced in this building.









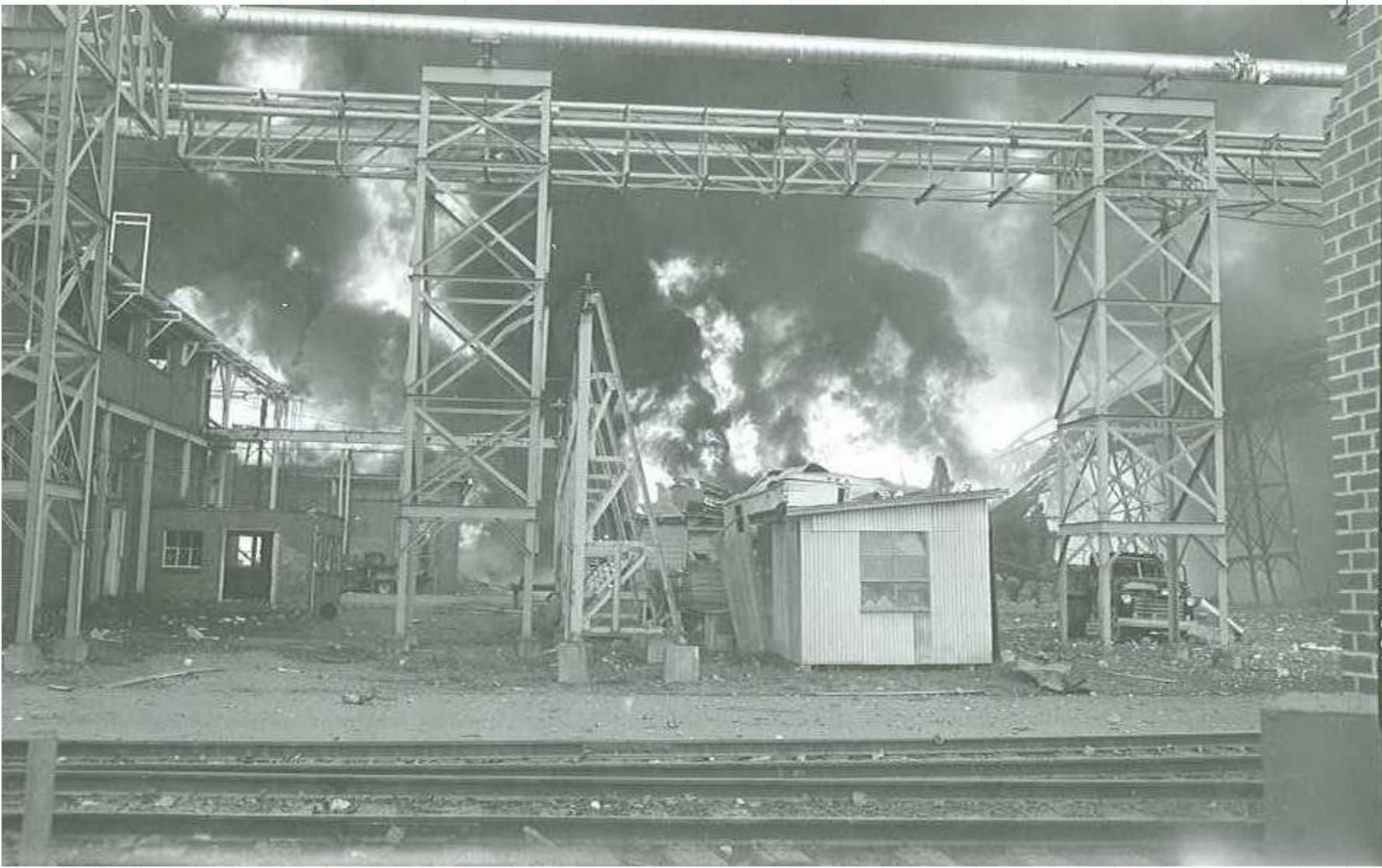






October 4, 1960







B-156 AT UPPER LEFT







Tealder southeast from 2114 600

1/18/00





Building 156











1/18/00









1/18/00





East and north sides Bldg. 27





Acid Area Electric Substation #1



East side of building 109

1/18/00

FIRECREW
CROSSING

BLDG. 113 &
BLDG. 273
←

RESERVED
EMERGENCY
VEHICLES
ONLY





Looking west on 3rd Street





View from site Bldg. 207 looking north



1/18/00



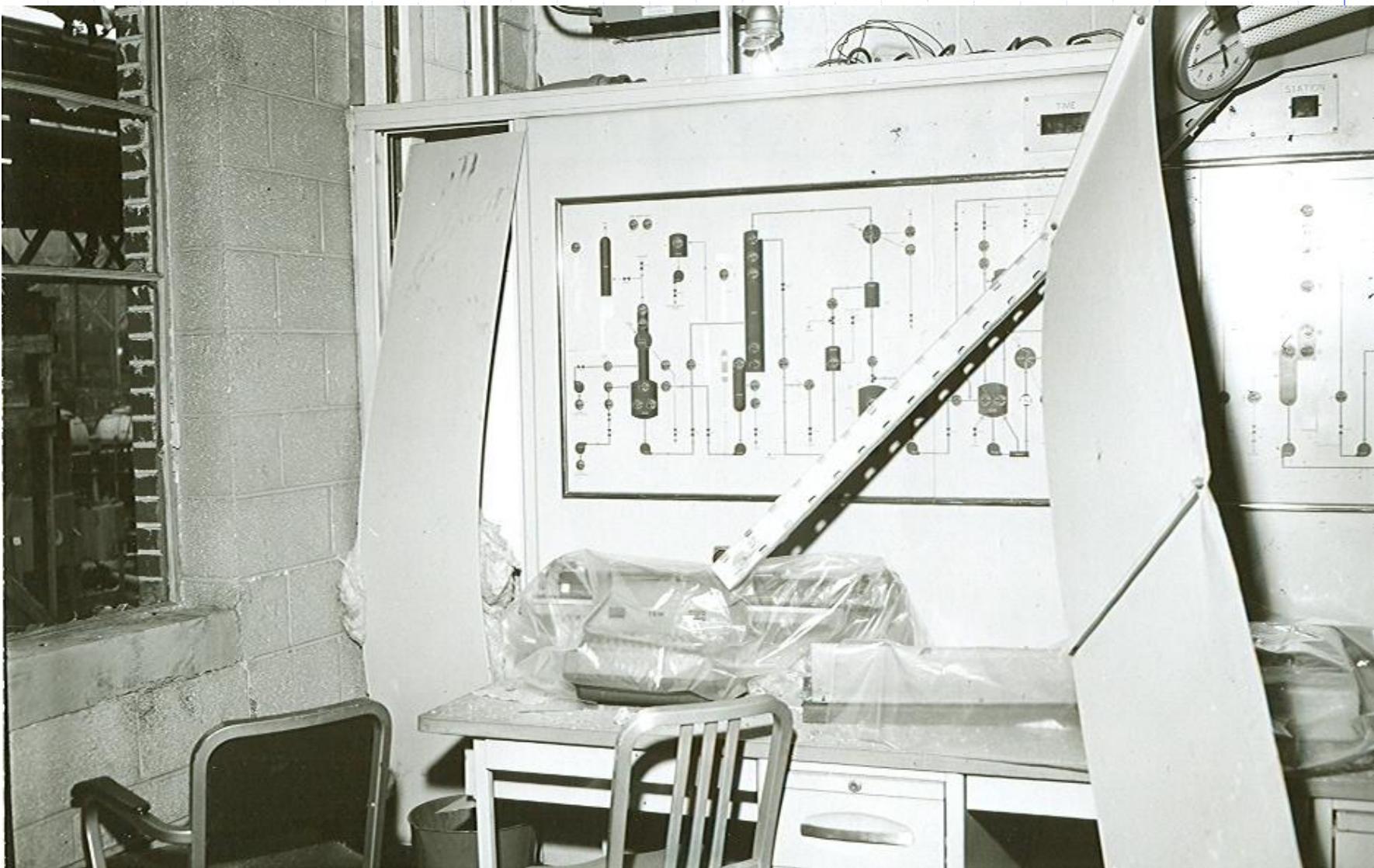


Looking west Bldgs. 32 & 8 in background











View of Aniline Plant Area on the morning of October 5, 1960, looking southwest.



1/18/00

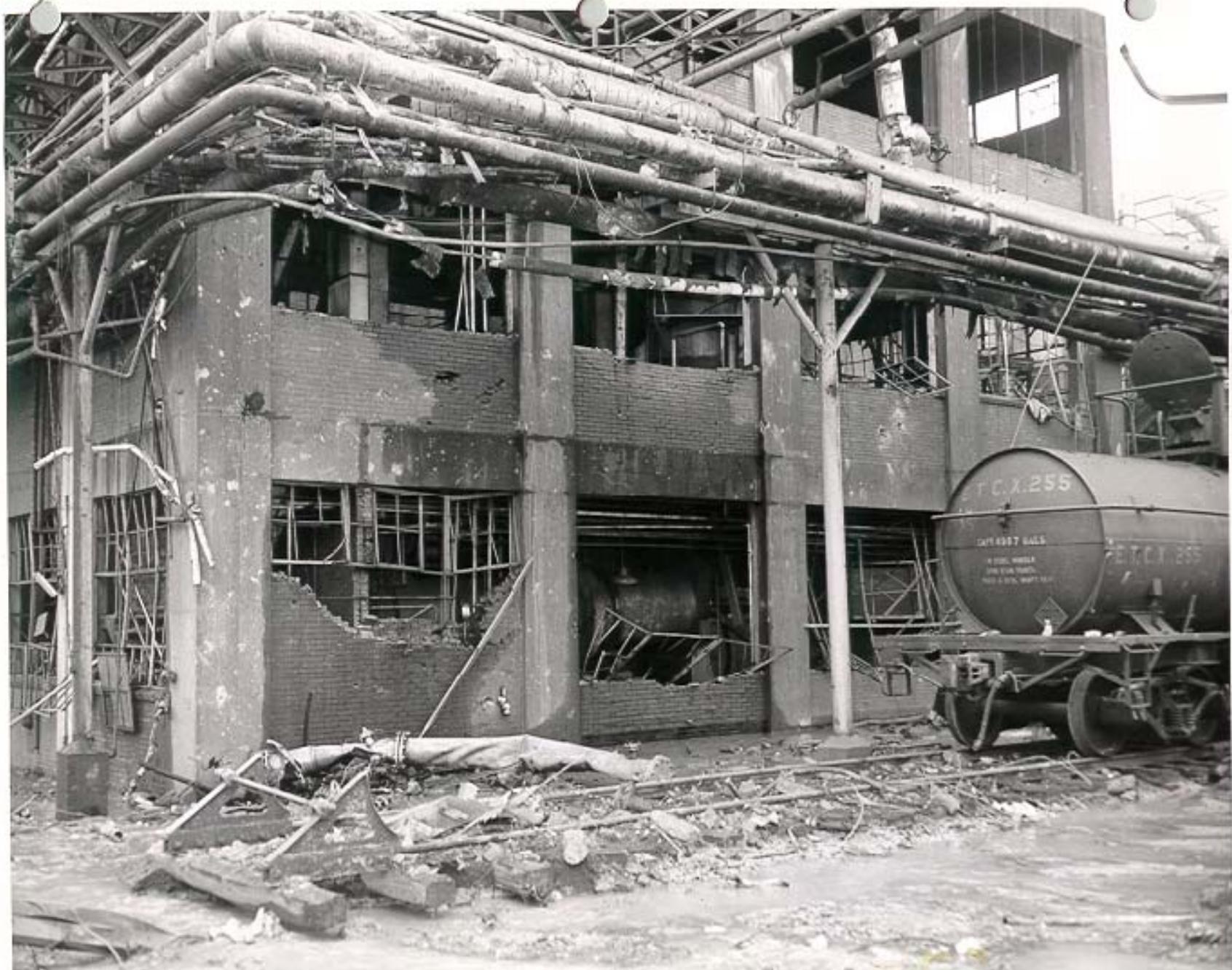




Building 87

1/18/00





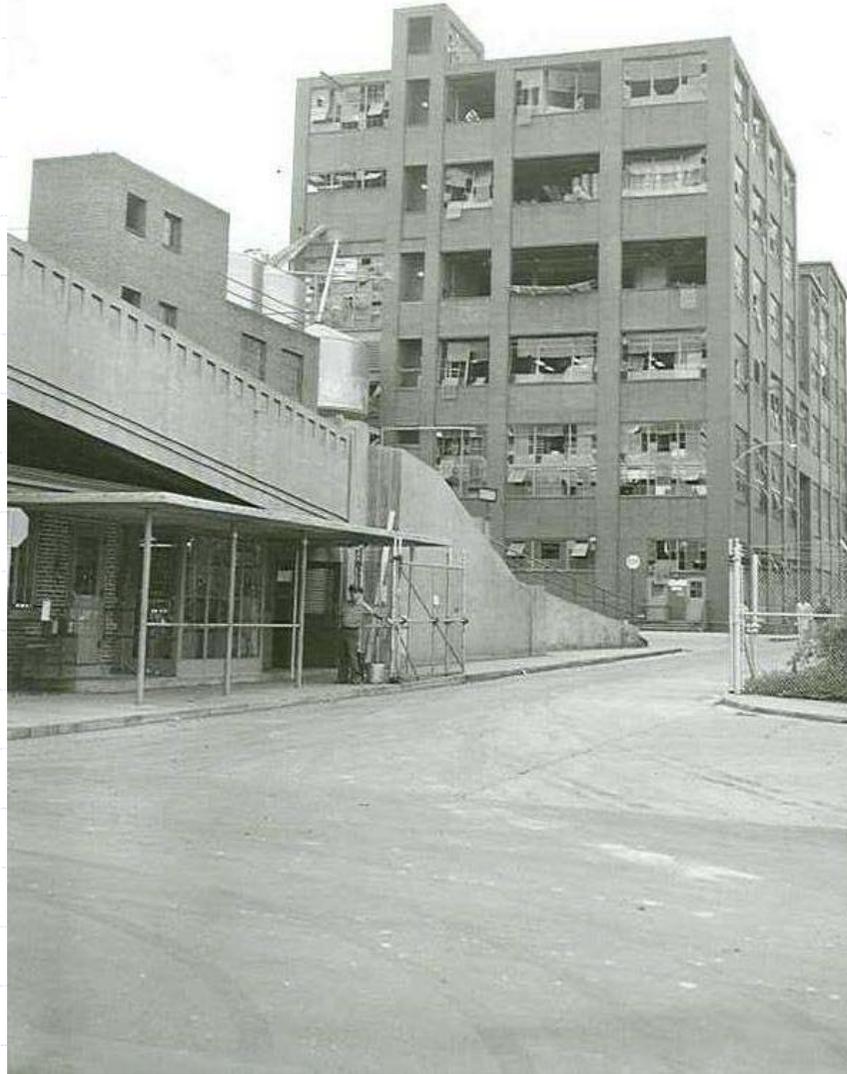








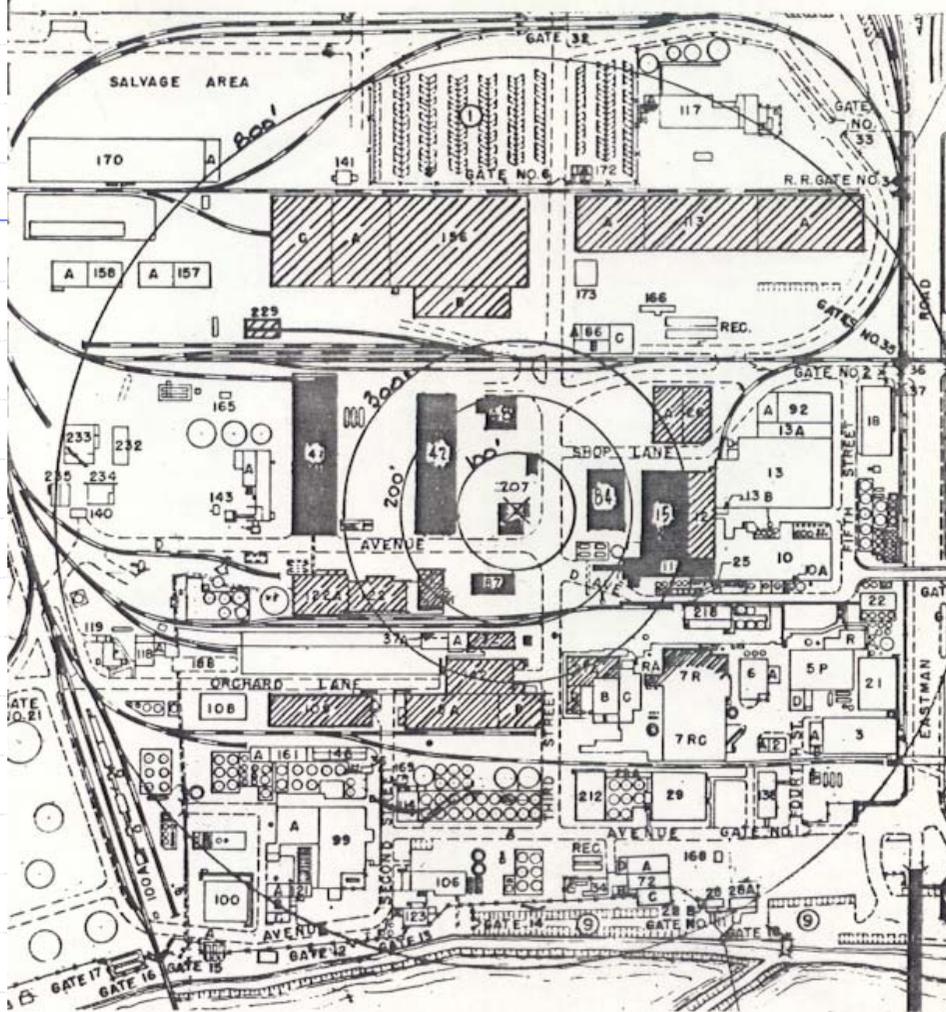






View from roof Bldg. 13 looking north - October 12, 1960





Map of TENNESSEE EASTMAN COMPANY
 Showing Area Surrounding Site
 of Explosion

PLANT NORTH



CENTER OF EXPLOSION

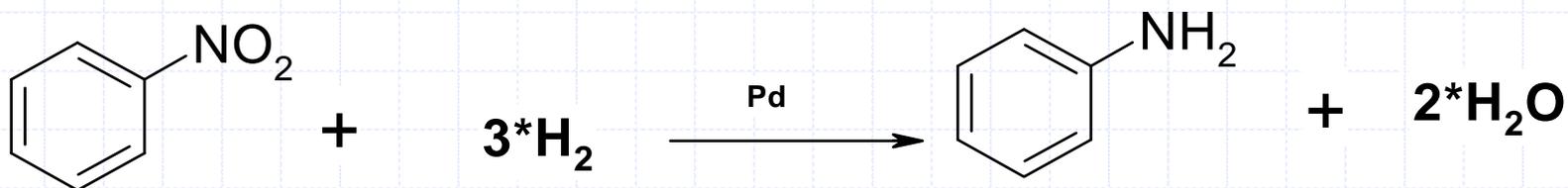
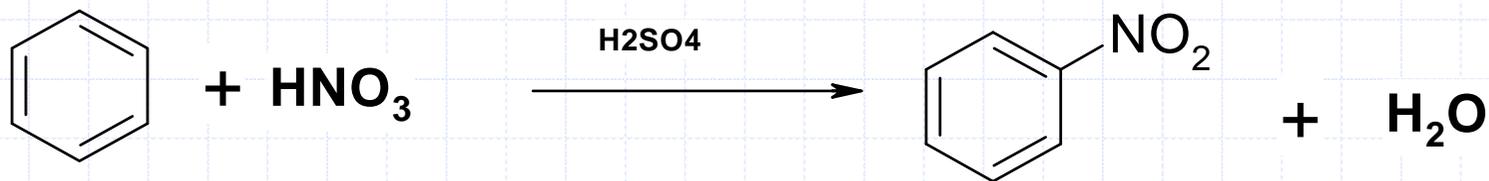


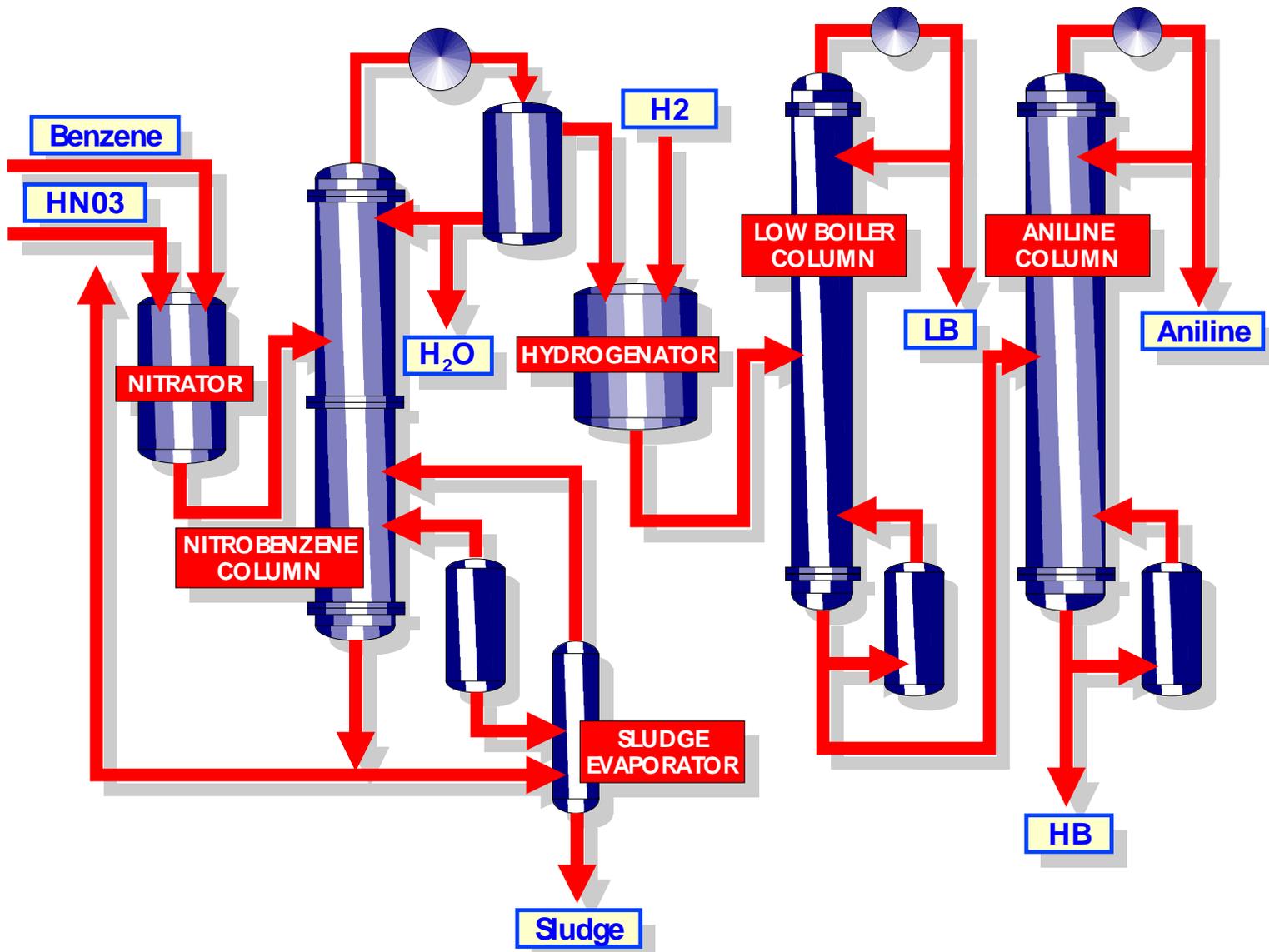
TOTALLY DESTROYED
 BY FIRE & EXPLOSION

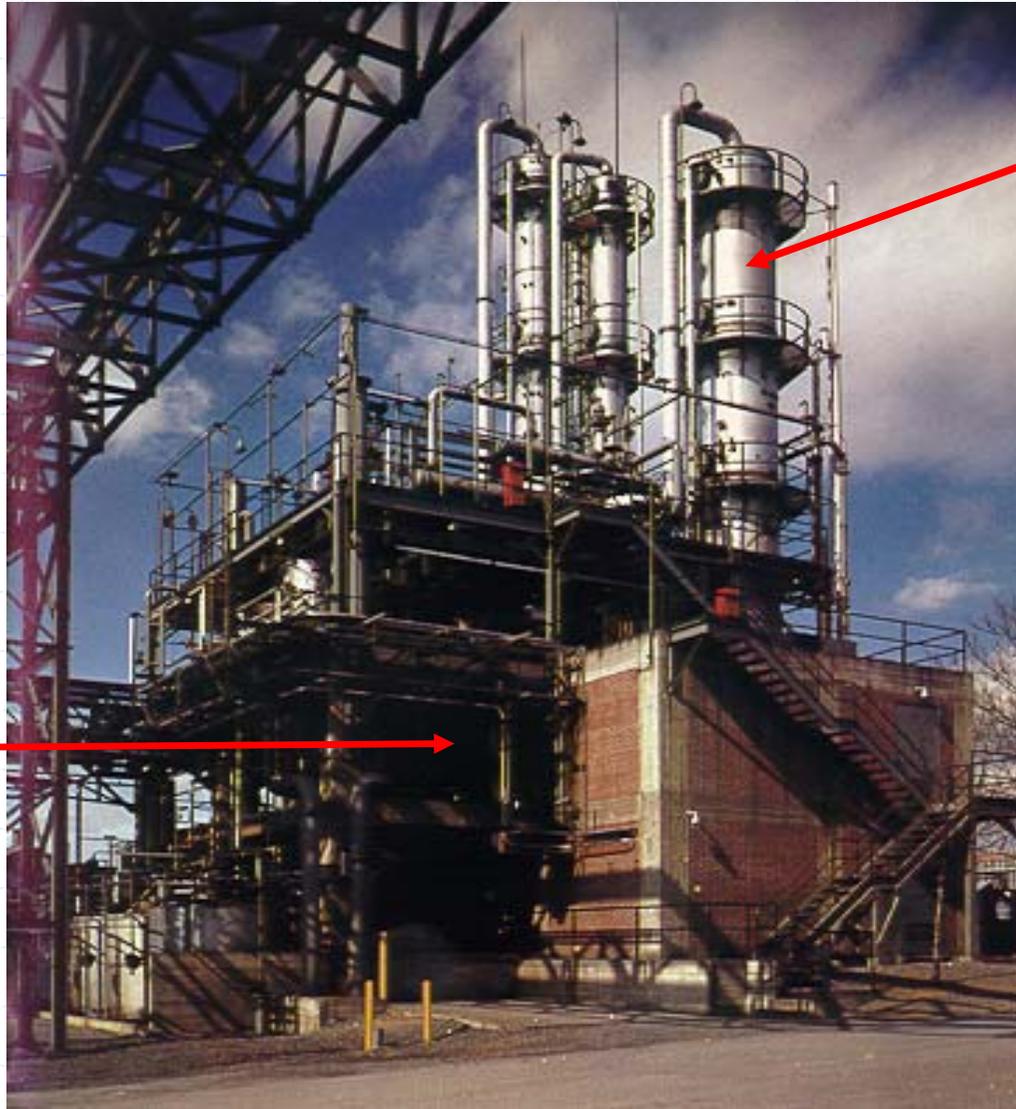


EXTENSIVELY
 DAMAGED

Aniline Chemistry

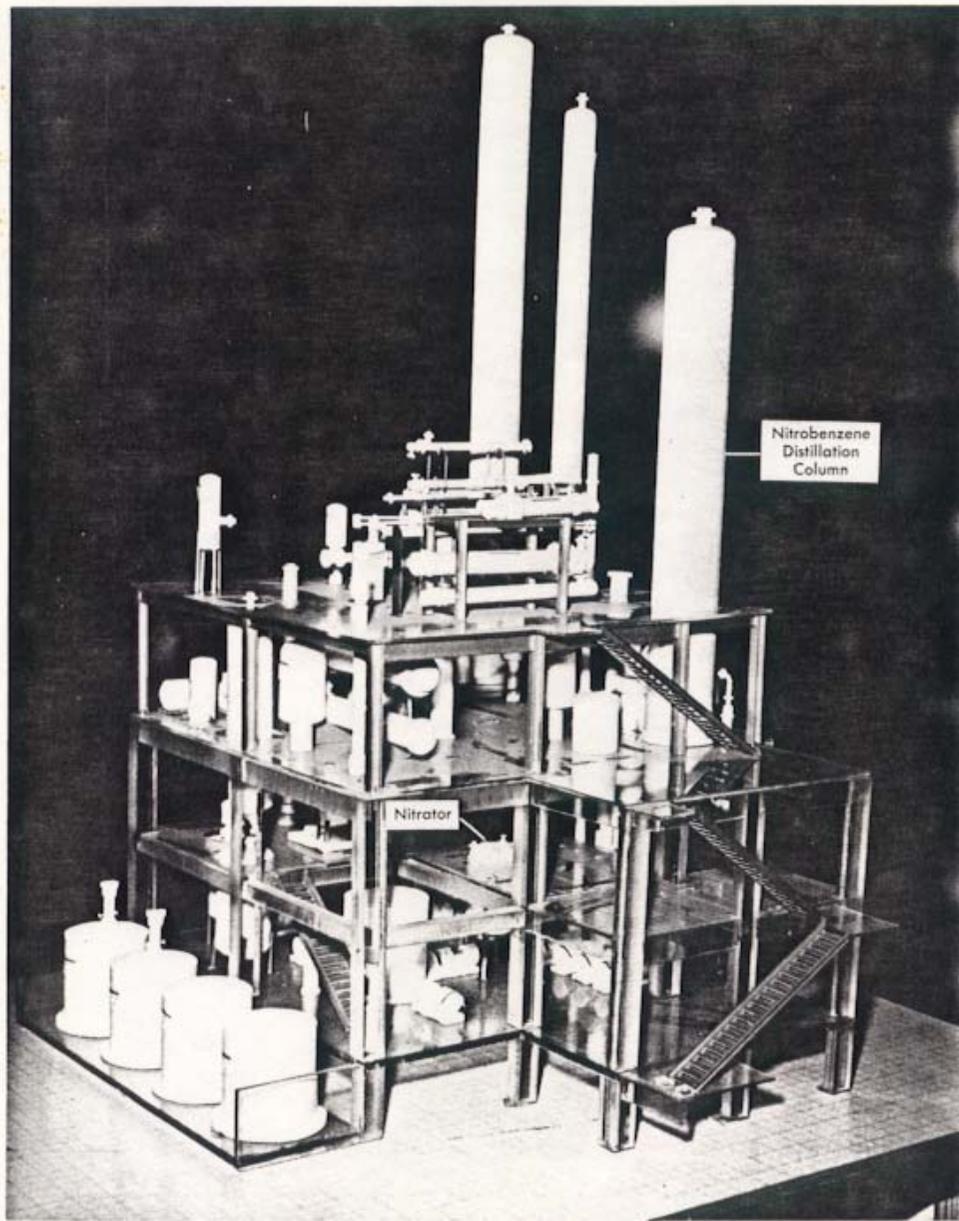




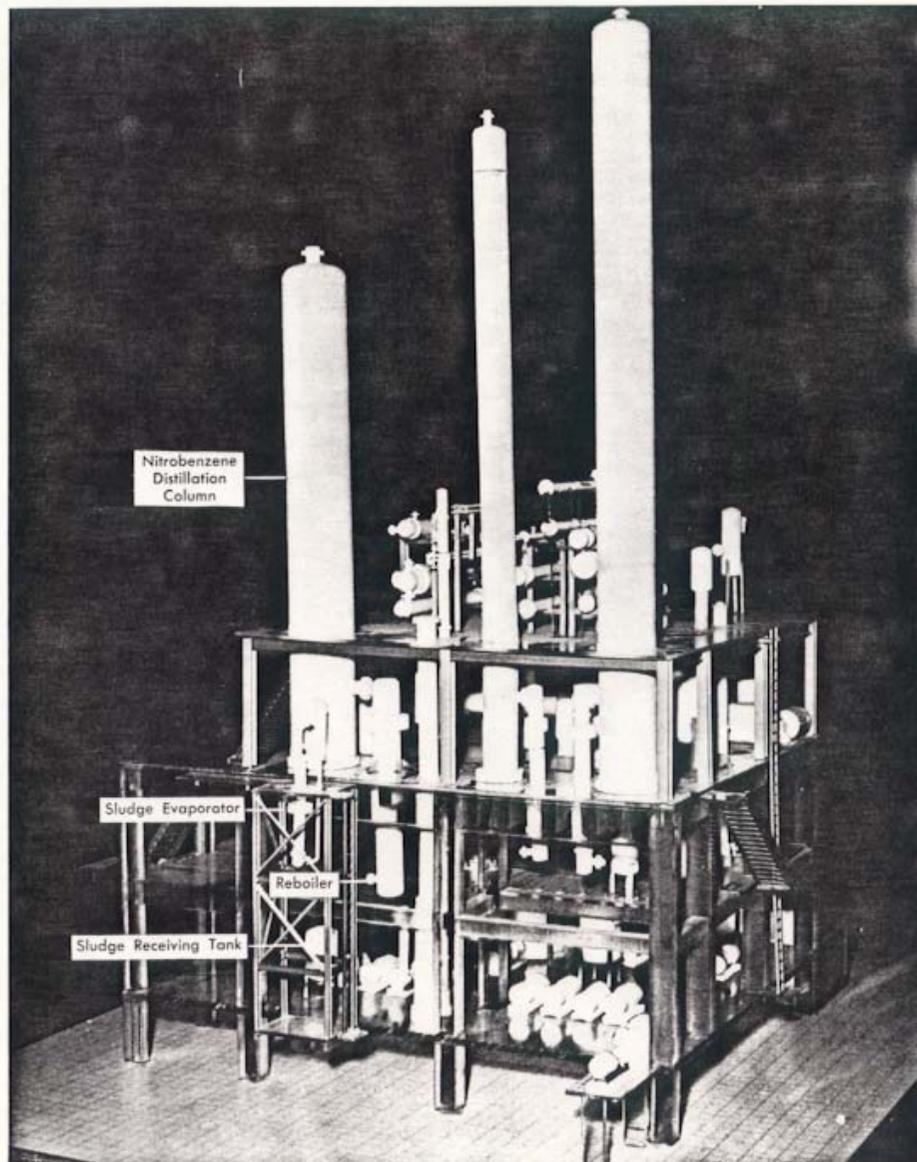


**Nitrobenzene
Column**

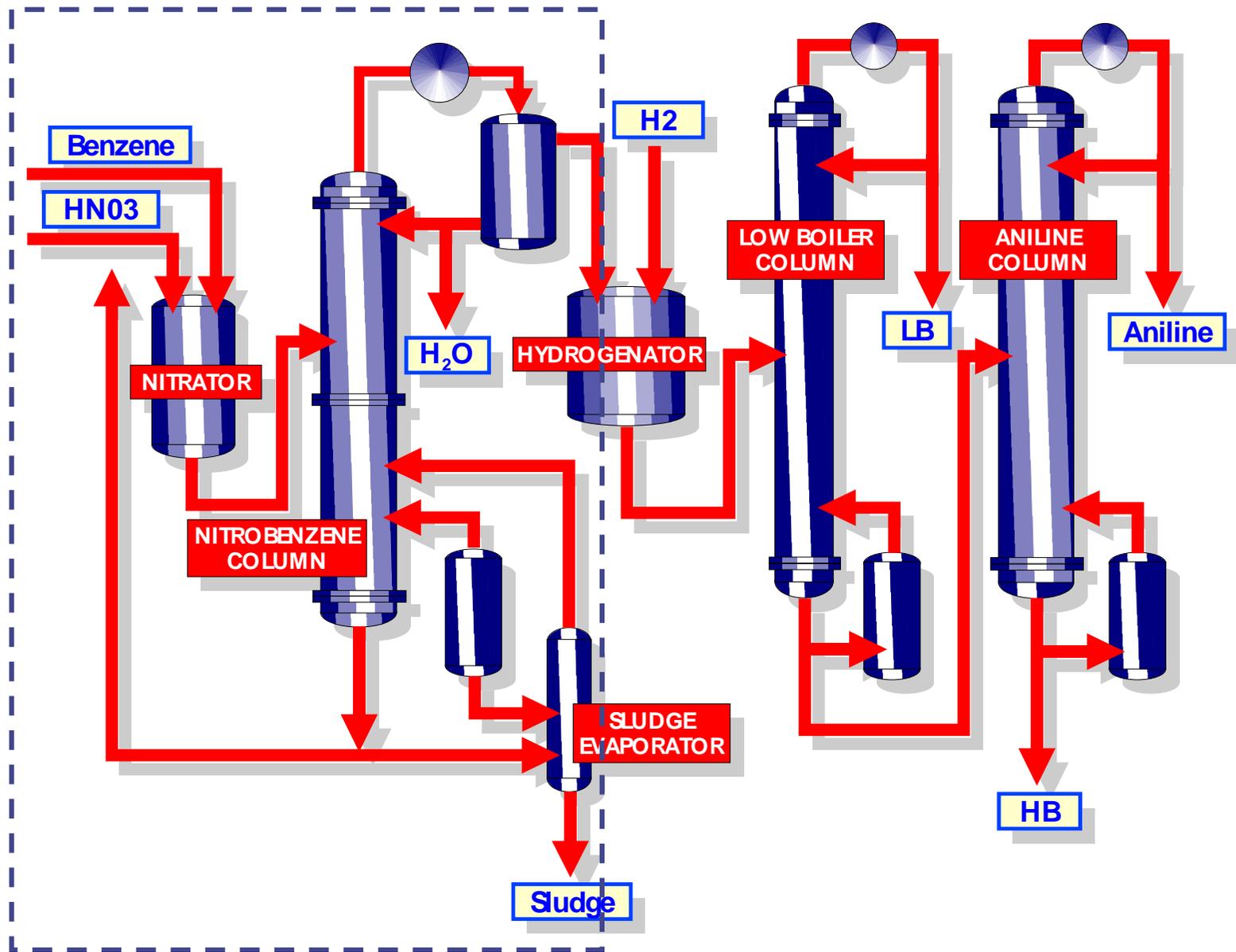
Nitrator

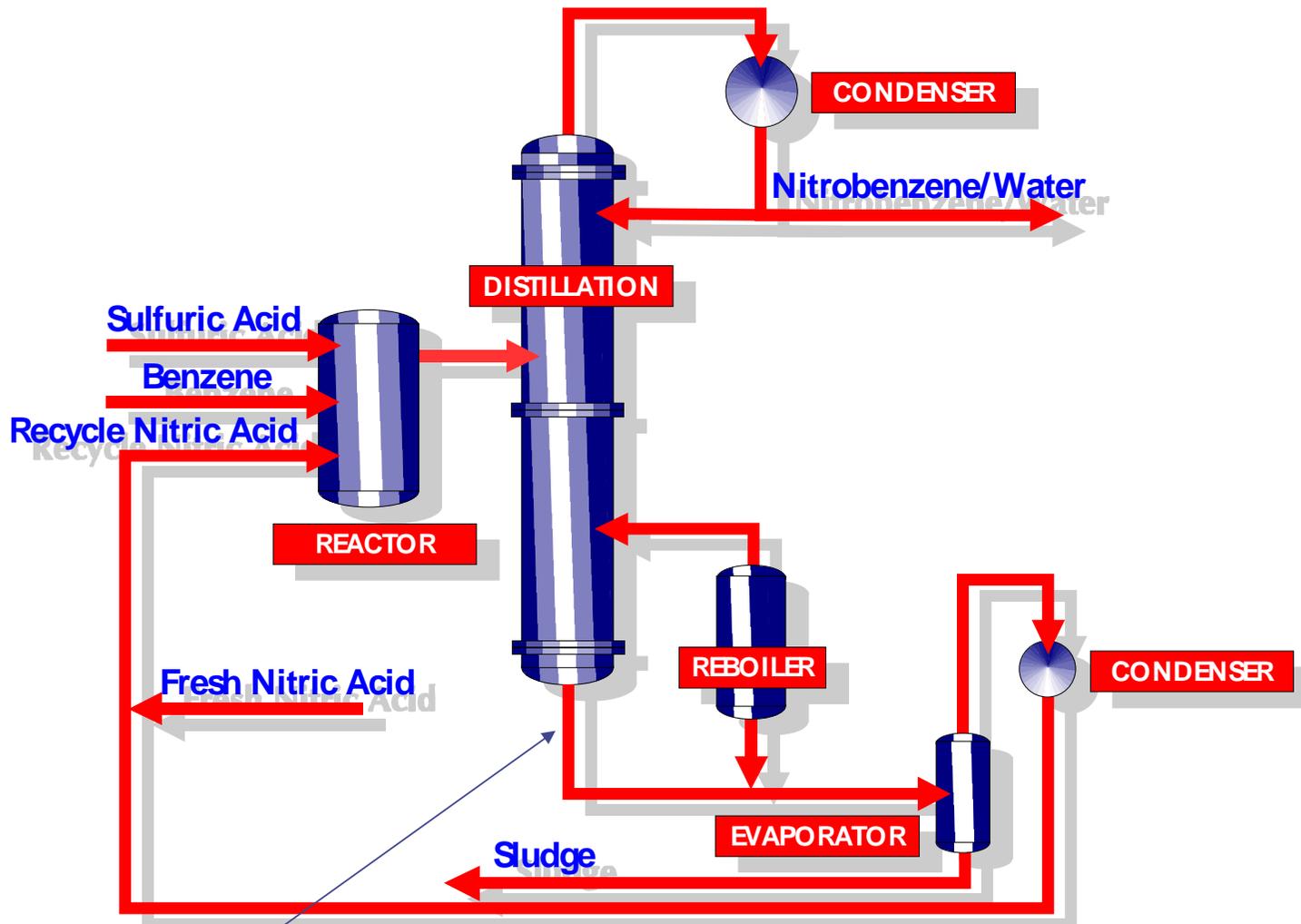


Photograph of Model of Aniline Plant, looking northeast.

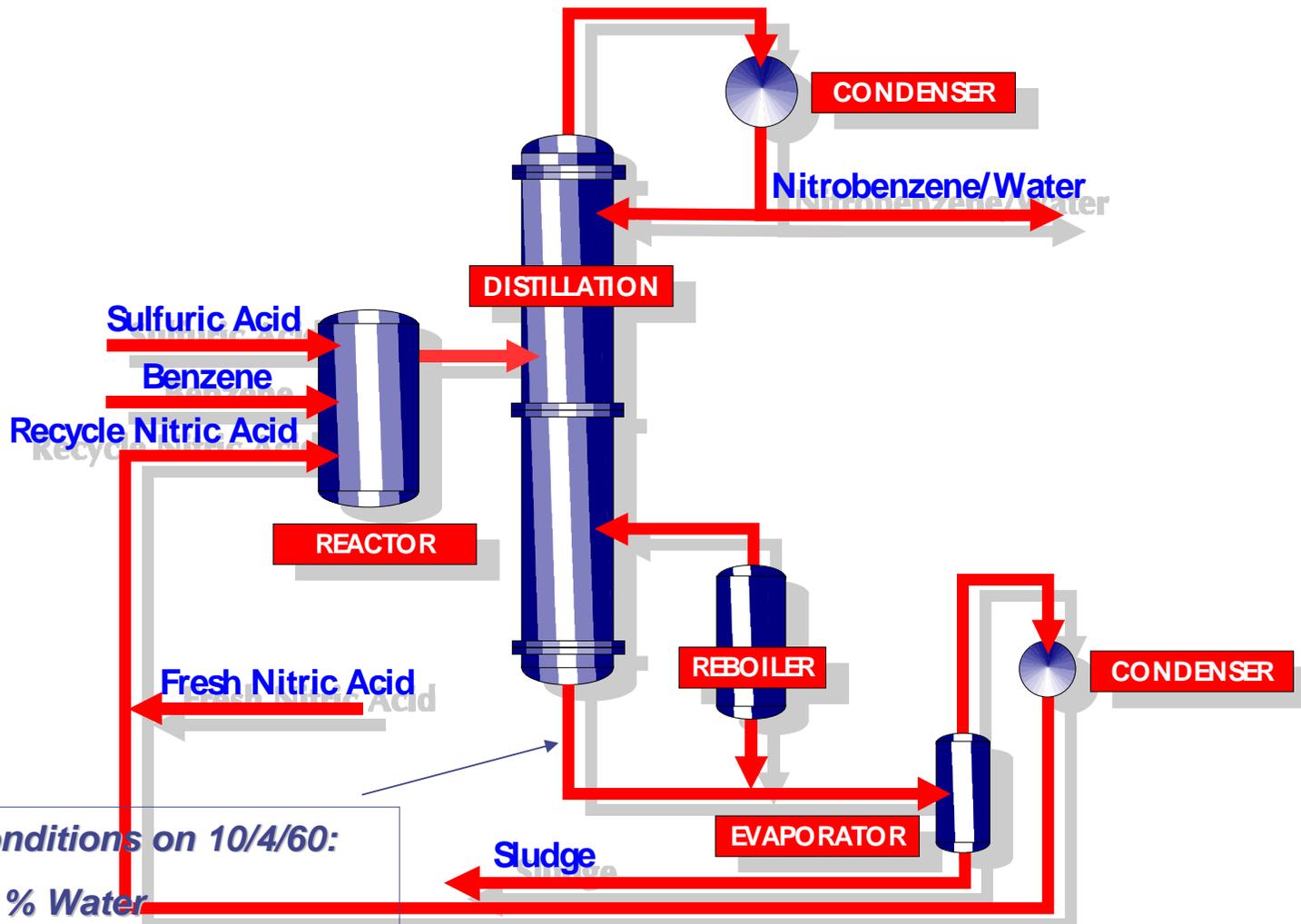


Photograph of Model of Aniline Plant, looking southwest.

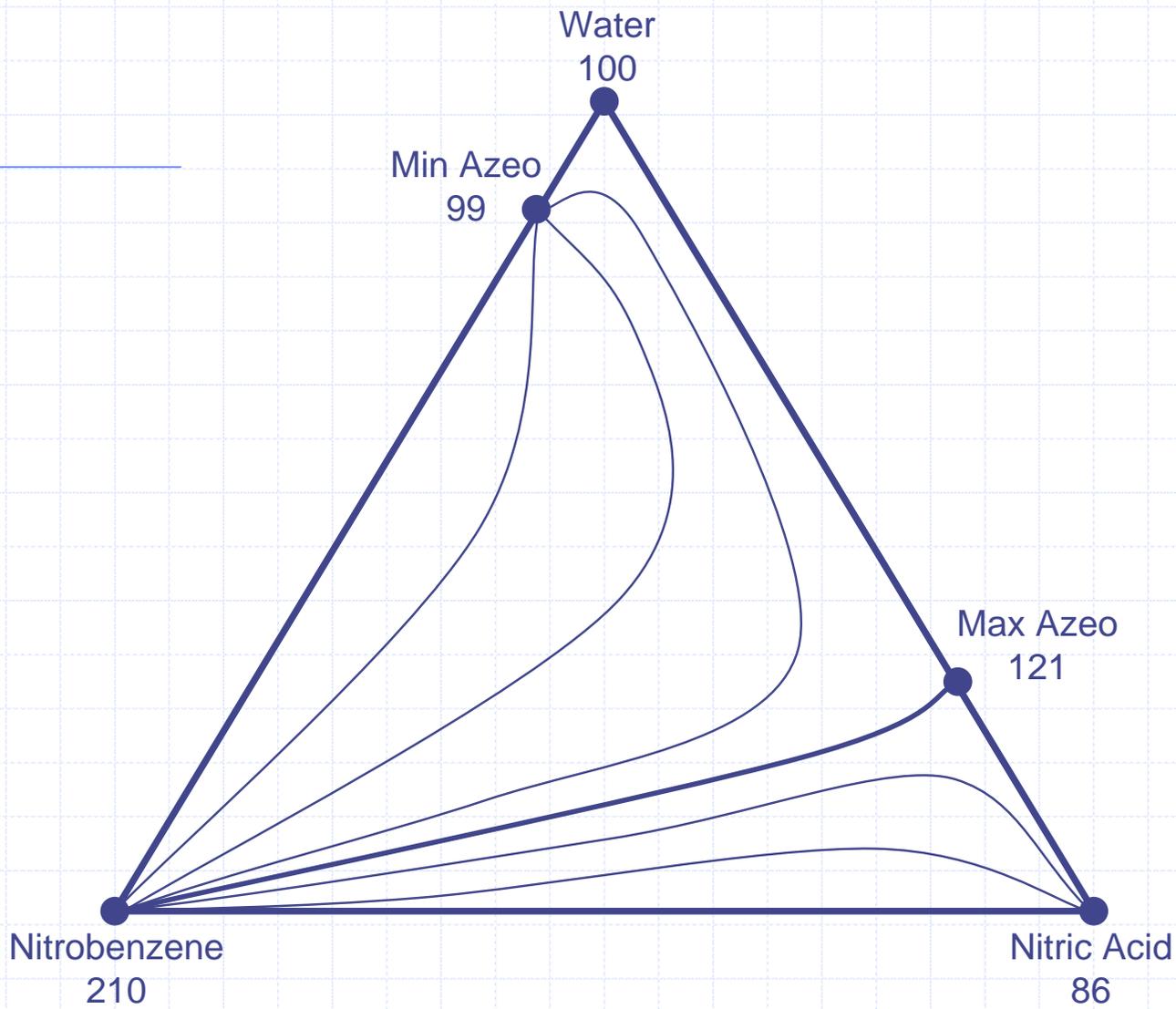


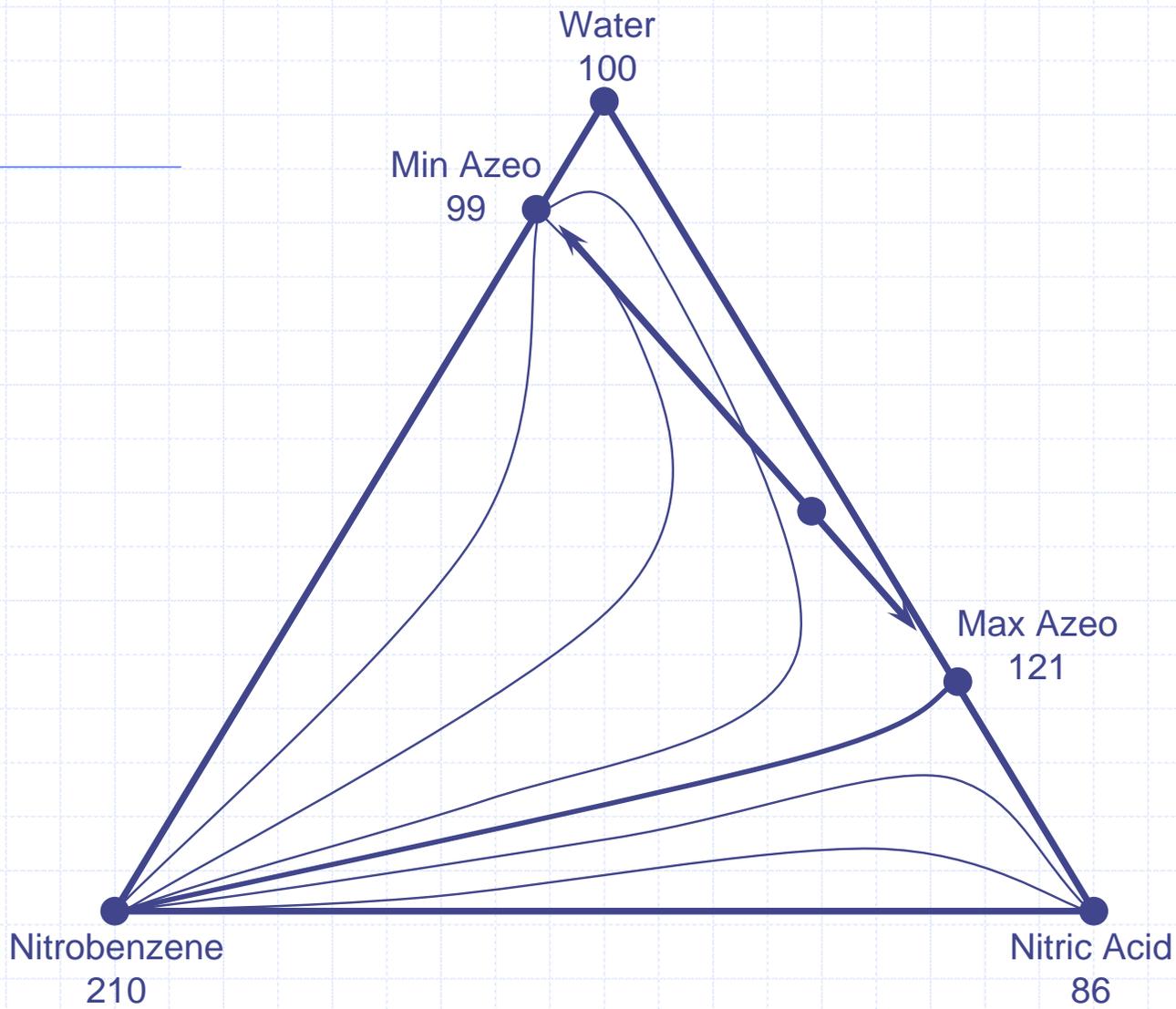


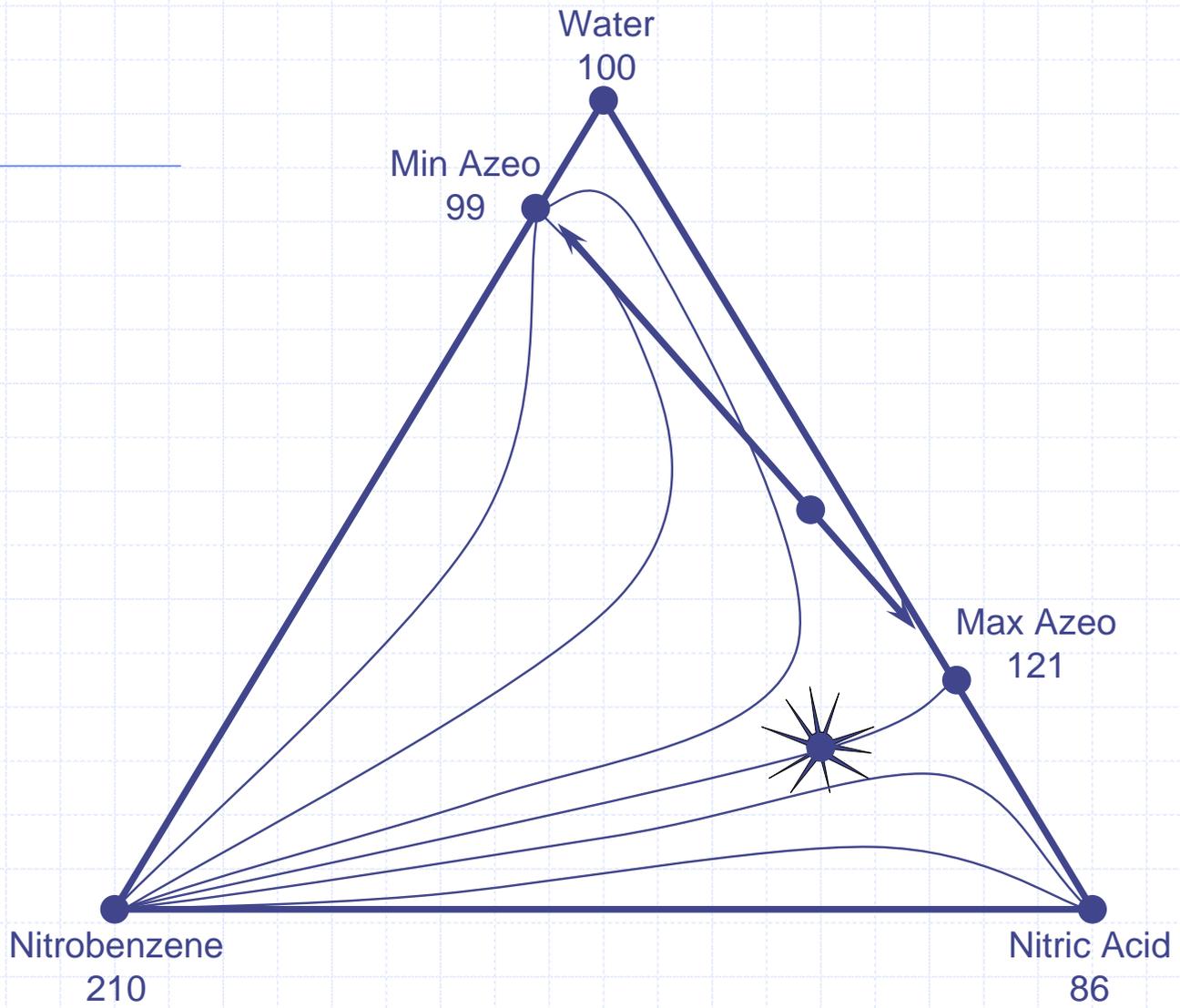
Normal Conditions:
Water and Nitric Acid

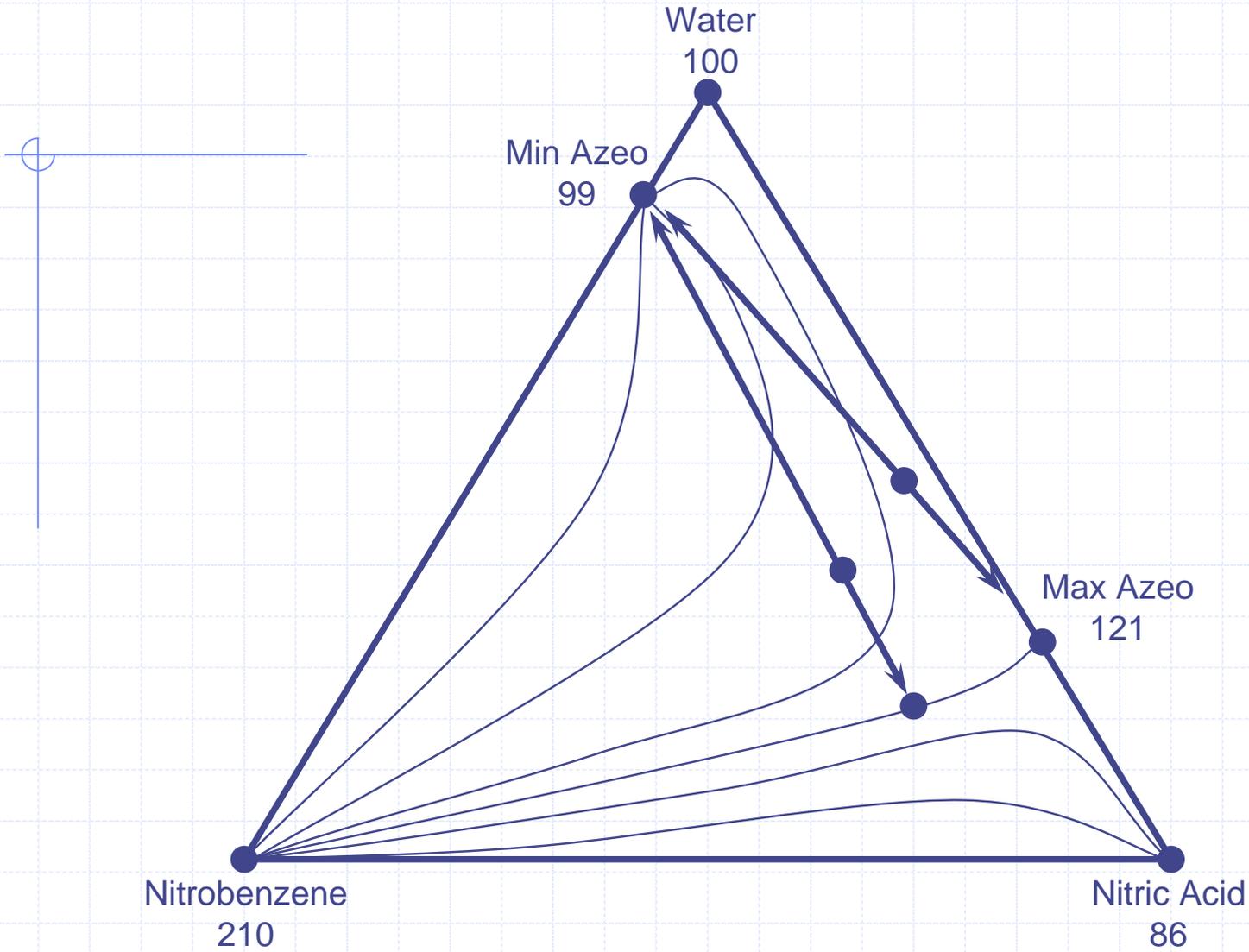


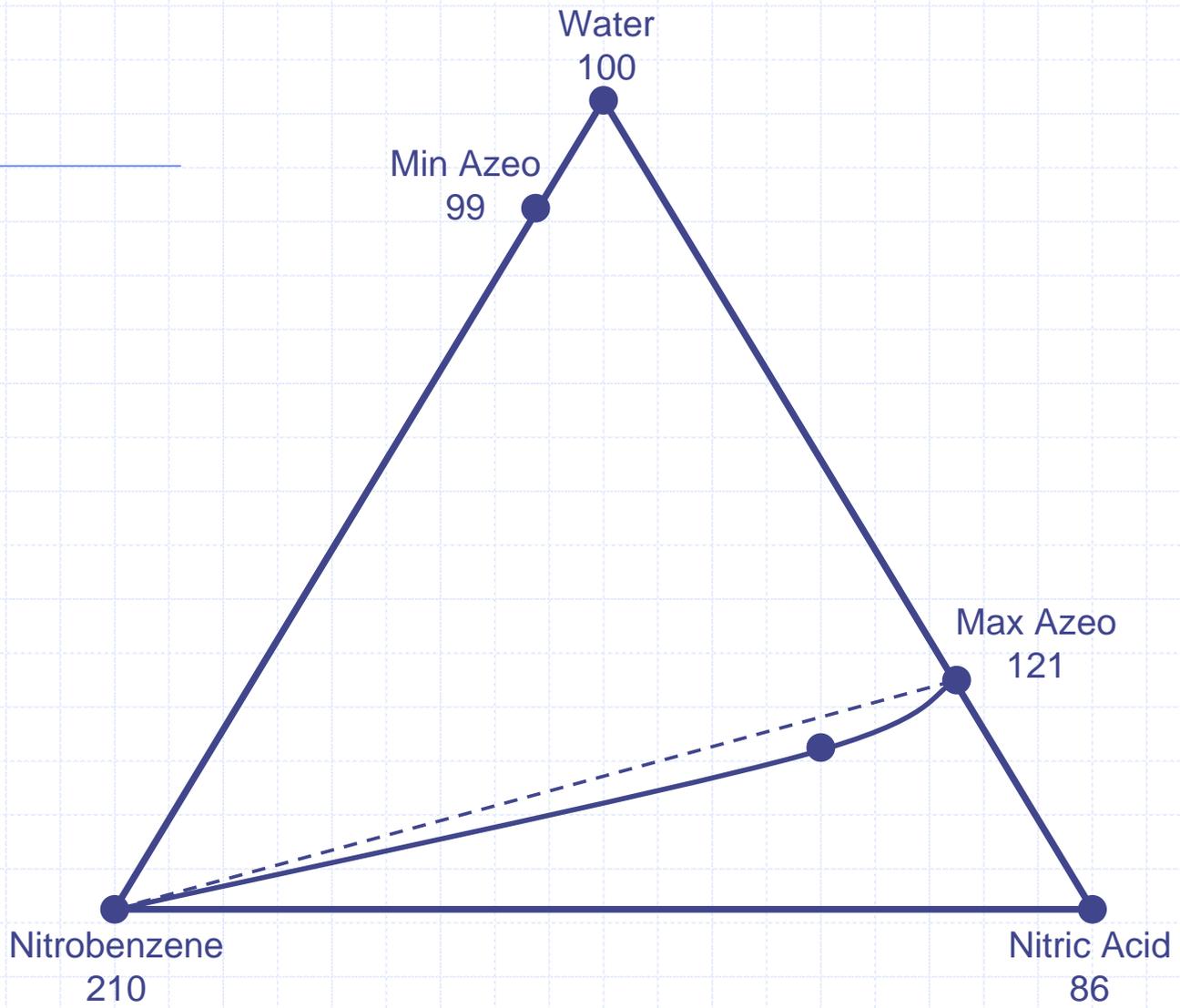
Conditions on 10/4/60:
19 % Water
63% Nitric Acid
18 % Nitrobenzene

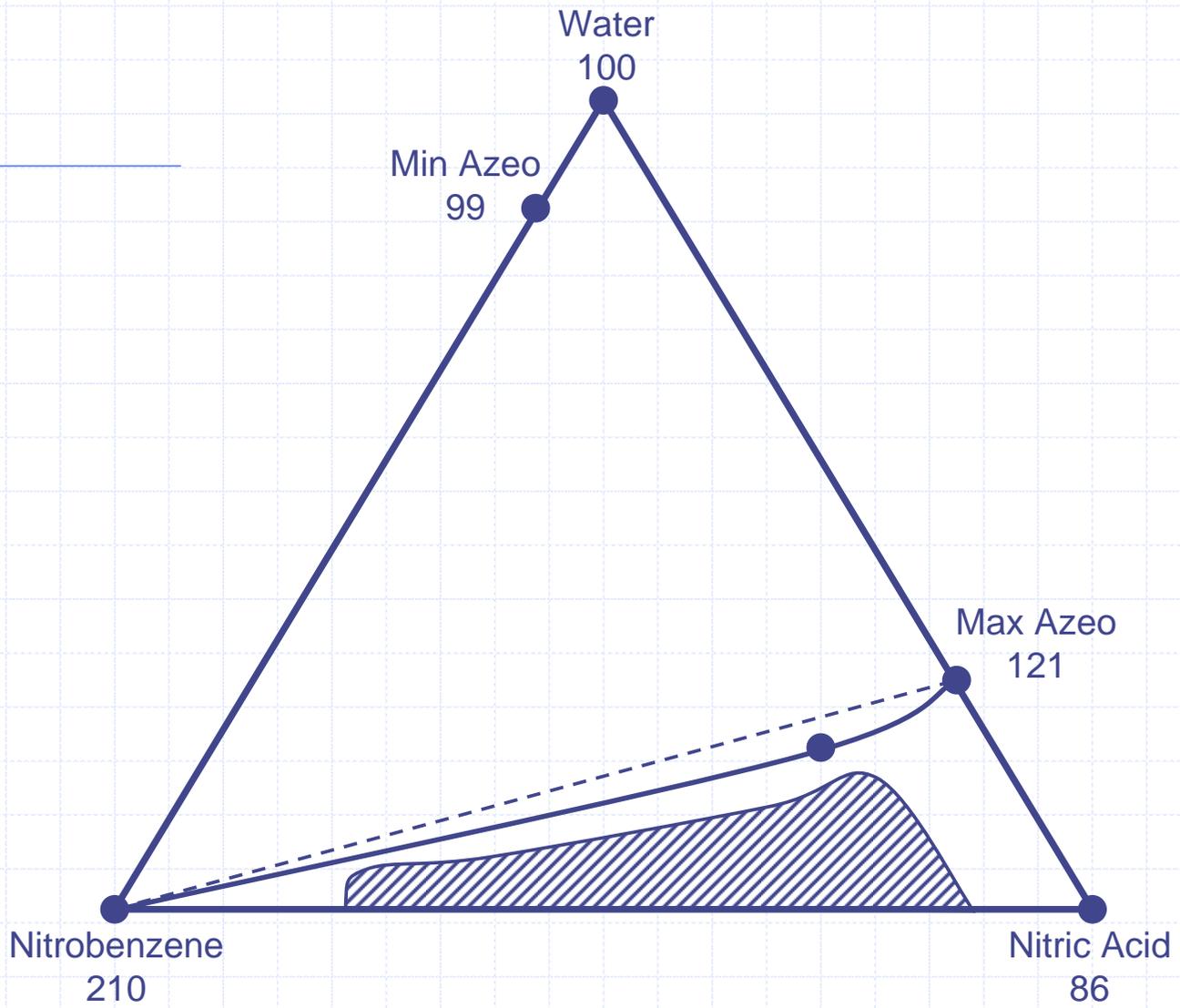


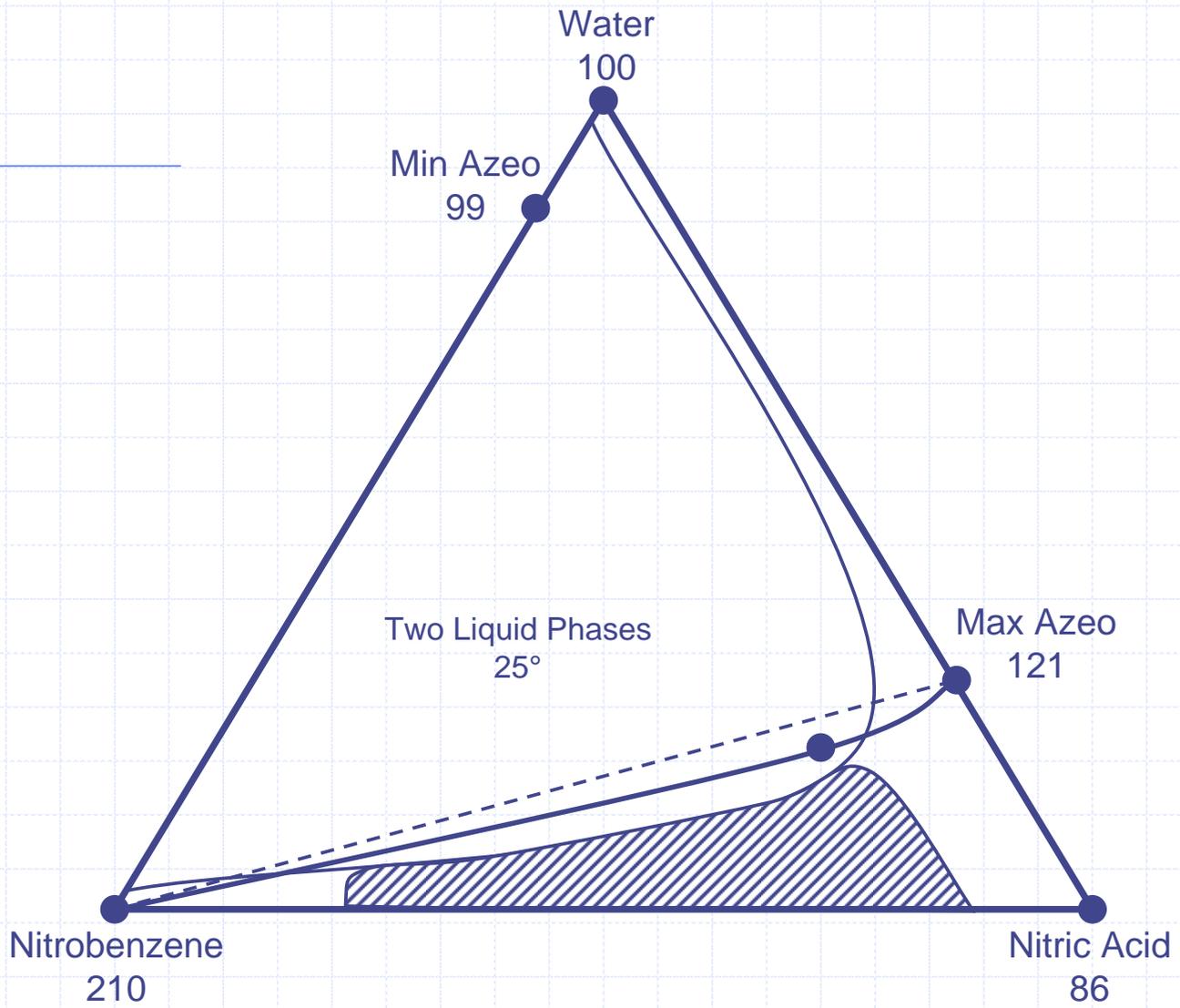


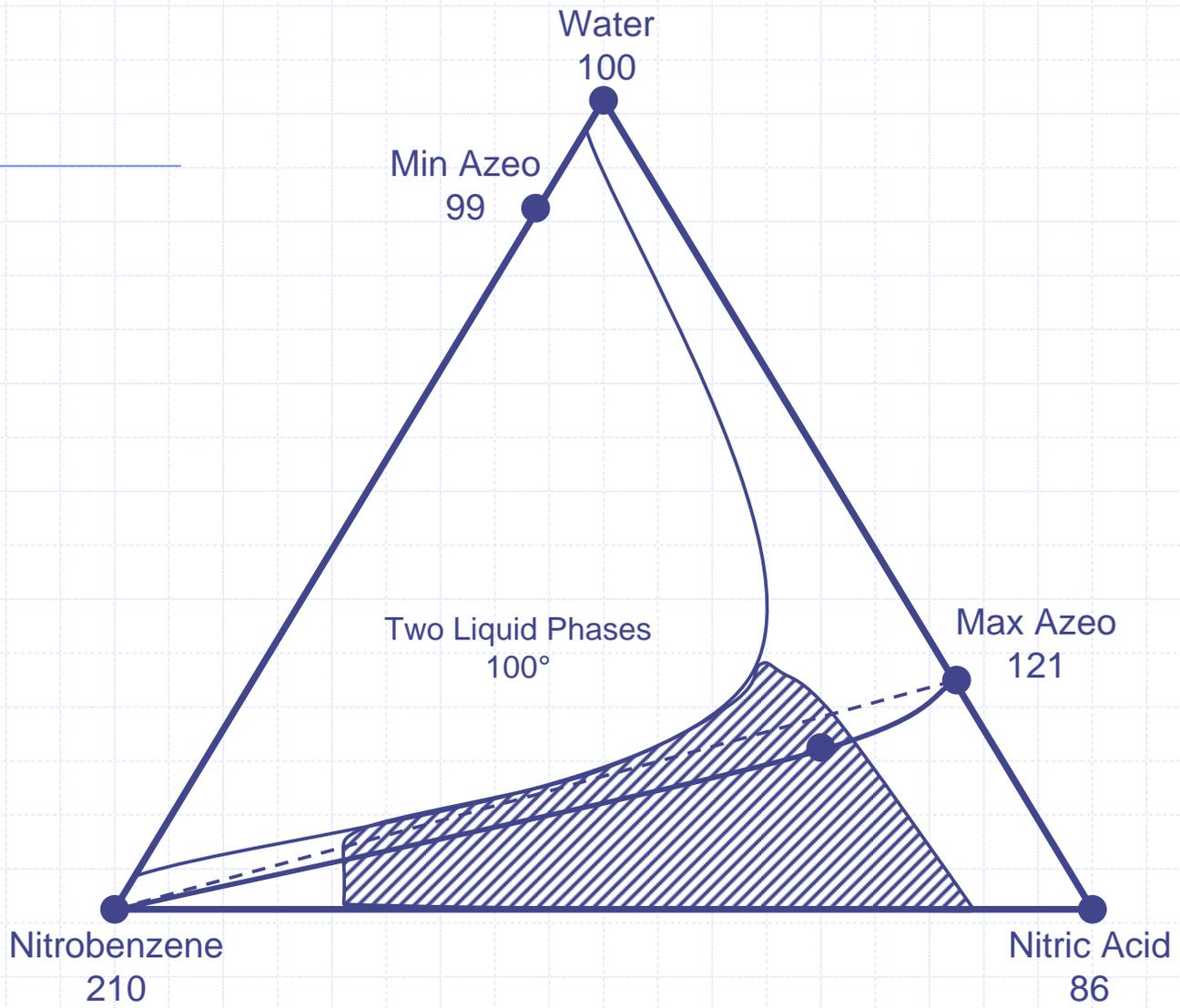


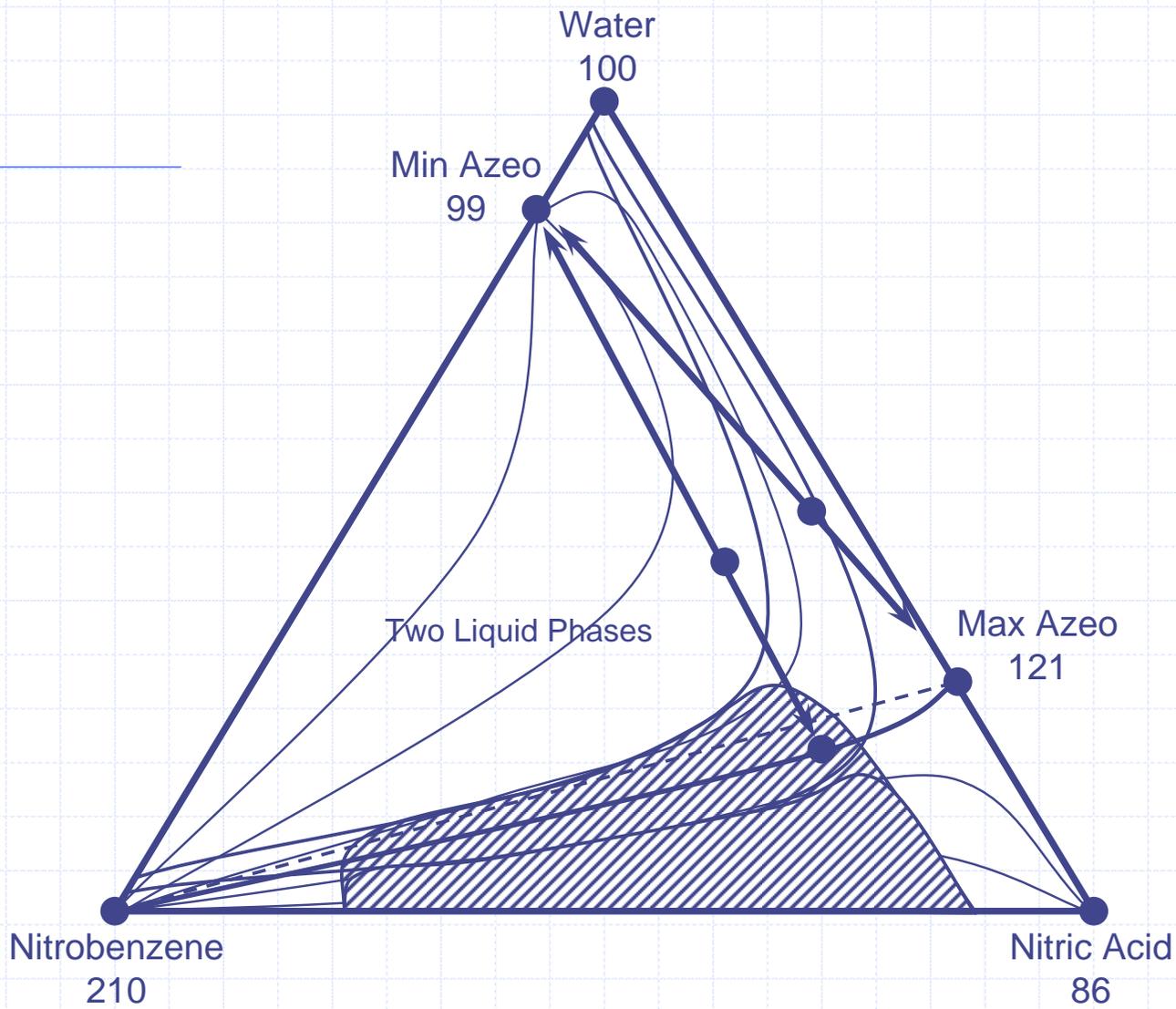












The Rest of the Story

- ◆ March, 1961—Eastman management sets up the Reactive Chemicals Committee (RCC). Divisional subcommittees soon follow. Title changed in mid-1970s to Process Safety Review Committee to encompass a broader range of process safety issues.
- ◆ Work on CHETAH (Chemical Engineering Thermodynamics and Hazard Evaluation) program is begun. CHETAH is now a world-wide recognized ASTM E27 standard for evaluation of reactive chemistry potential

The Rest of the Story

- ◆ 1999 to 2003—Specialty subcommittees formed to address special technical tasks:
 - Hazardous Chemicals Committee
 - Hazardous Process Controls Committee
 - Facility Siting and Risk Management Committee
 - Institutional Biohazards Committee (IBC)
- ◆ So, have we been successful?

Success?

- ◆ Work-related fatalities dropped by a factor of 5 from the 1960's to the 1990's, while employment rose from an average of 7500 in the 1960's to over 11,000 in the 1990's
- ◆ A rate decrease of nearly a factor of 10
- ◆ **Still not zero.**

Learnings

- ◆ Never lose your sense of vulnerability
- ◆ After-the-fact analysis can yield significant insights
- ◆ Safety culture is strongly influenced and impacted by significant events
- ◆ Review of these events can have a positive, reinvigorating impact on an already strong safety culture