DORMITORY DEMONSTRATION FIRE TESTS

inFIRE Conference
FM Global
Norwood, MA
June 15, 2005

FM GLOBAL

- *200 COLLEGES AND UNIVERSITIES WORLDWIDE*

OBJECTIVE

- *REALISTICALLY ILLUSTRATE LIFE SAFETY HAZARDS ASSOCIATED WITH STUDENT DORMITORY FIRES*

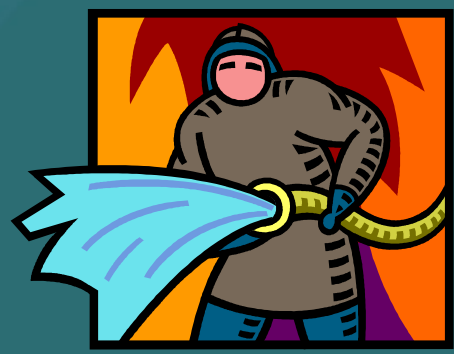
- *SHOW BENEFIT OF SPRINKLER PROTECTION FOR DORMITORY SPACES*

FIRE IN STUDENT DORMITORIES

- ***APPROXIMATELY 2900 FOUR-YEAR CAMPUSES IN U.S.***

- ***60 PERCENT HAVE FIRE SPRINKLER PROTECTION***

- ***OCCUR MOST OFTEN SEPTEMBER TO MAY****



FIRE INJURIES

- *MOST OCCUR DURING FIRE CONTROL (56 PERCENT) OR ESCAPING (16 PERCENT)*
- *SLIGHTLY MORE INJURIES WHILE SLEEPING (24% VS. 19%)*
- *LESS WHILE ESCAPING (16% VS. 25%)*

[USFA DATA]

FATALITIES

- *7.7 PER 1000 FIRES VS. LESS THAN 1*
- *18 FATALITIES 1979 – 1998 [UNIVERSITY OF MARYLAND STUDY]*
- *JANUARY 2000 – THREE FATALITIES AND 60 INJURIES [SETON HALL, NJ]*

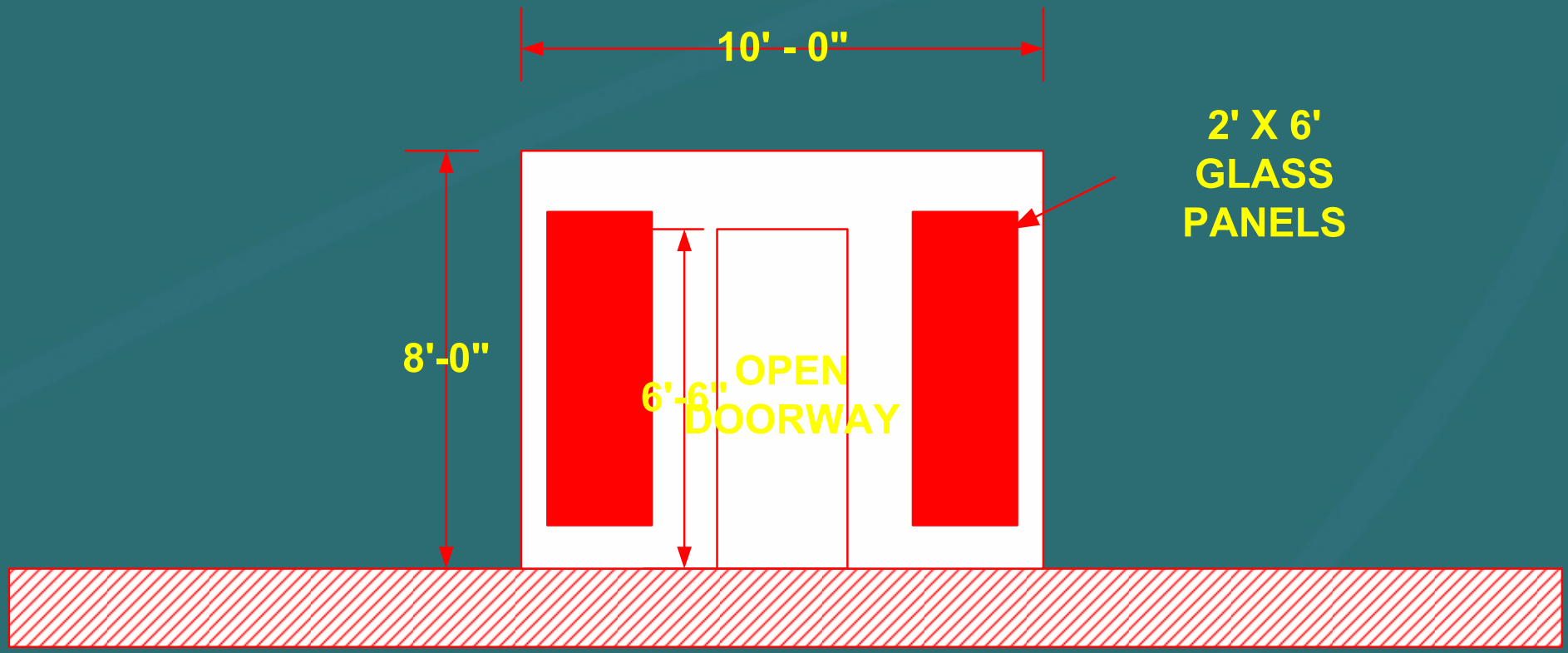
LOSS COST

- *NEGATIVE PUBLICITY = POTENTIAL RECRUITING PROBLEMS*
- *PROPERTY DAMAGE - $24.7M ANNUALLY (1980 – 2001)*
- *HOUSING SHORTAGE DURING ACADEMIC YEAR*

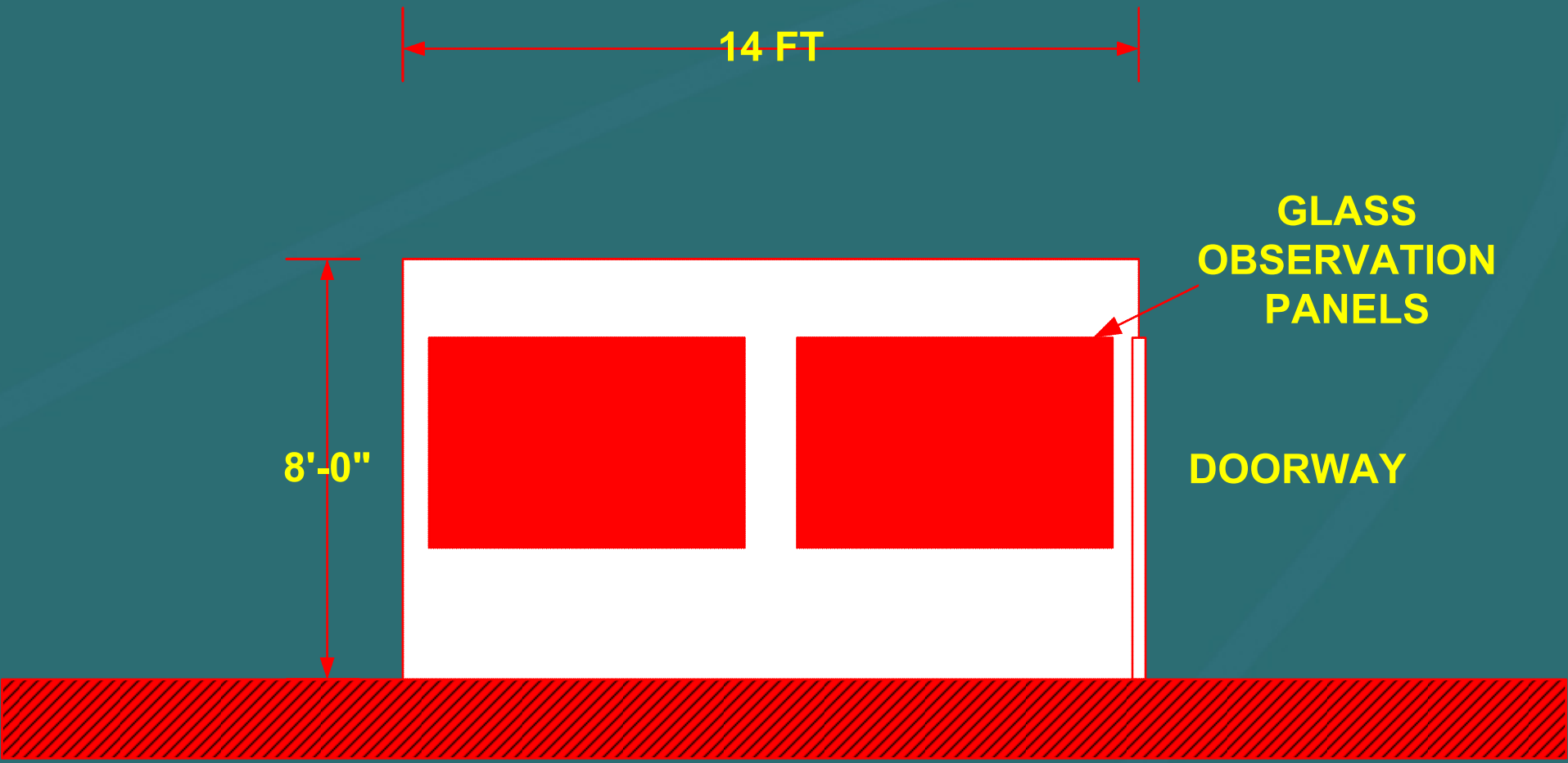
TEST PROCEDURE

- ***REPRESENTATIVE DORM ROOMS***
  - FURNITURE
  - CLOTHING/PERSONAL ITEMS

- ***SPRINKLERED VERSUS UNSPRINKLERED COMPARTMENTS***



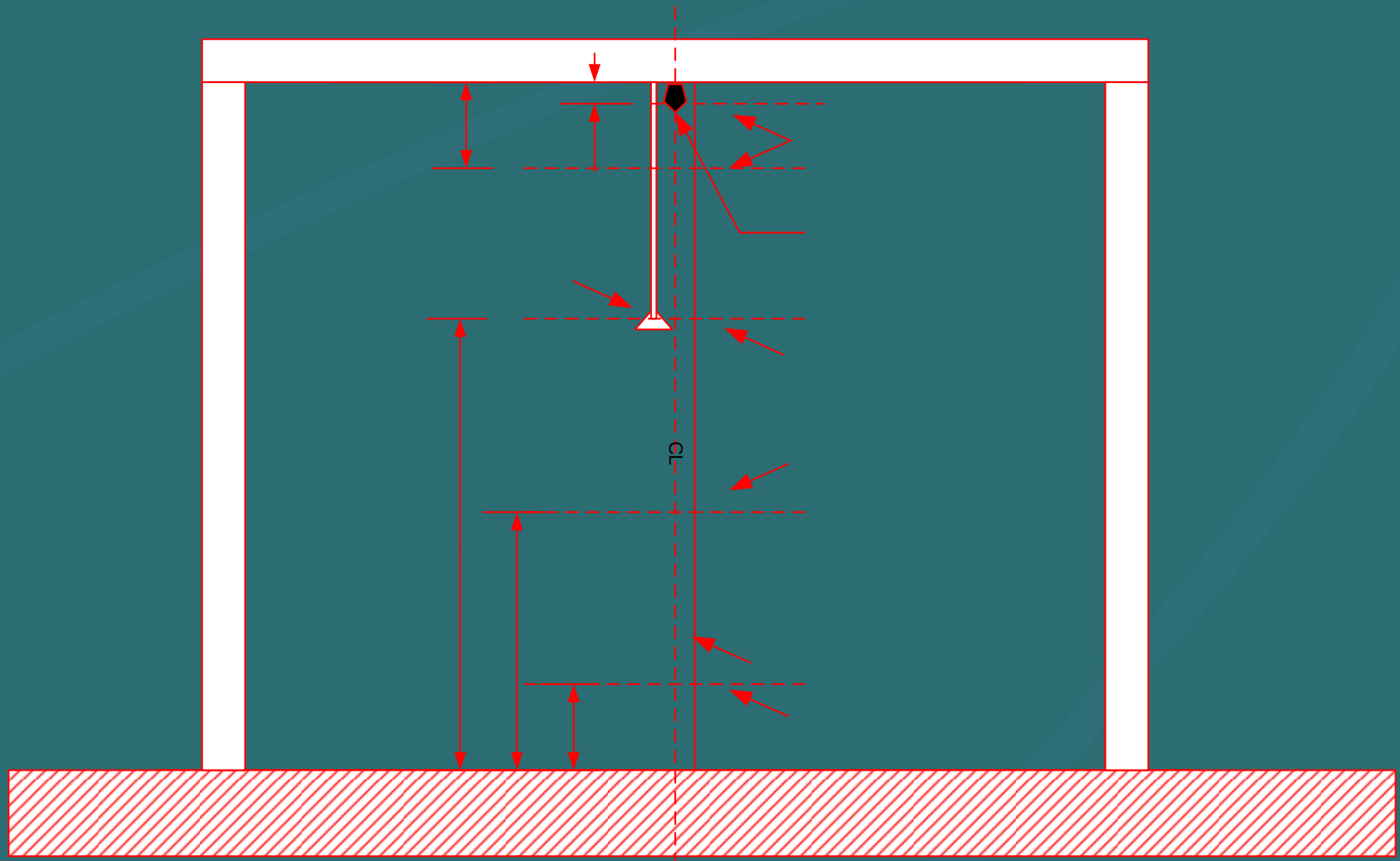
DORMITORY DEMONSTRATION FIRE TESTS
ELEVATION VIEW FRONT (DOOR)



DORMITORY DEMONSTRATION FIRE TESTS - ELEVATION VIEW
OBSERVATION PORT SIDE


CAUTION
CAUTION
CAUTION
CAUTION

Observation Glass
BED
SOFA
CURTAINS
TV STAND



INSTRUMENTATION STATION AT CENTER OF ROOM

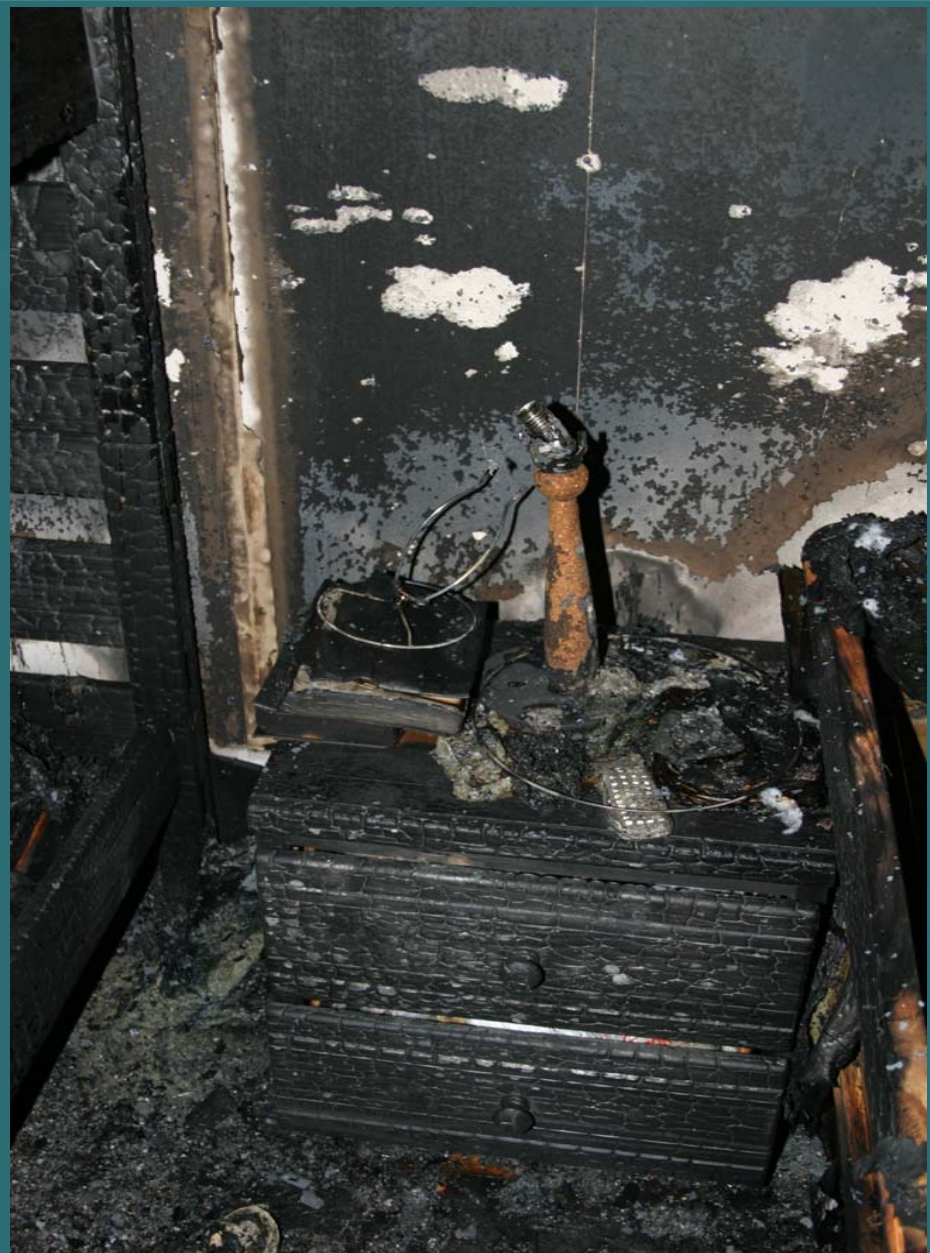

ECONOMICS

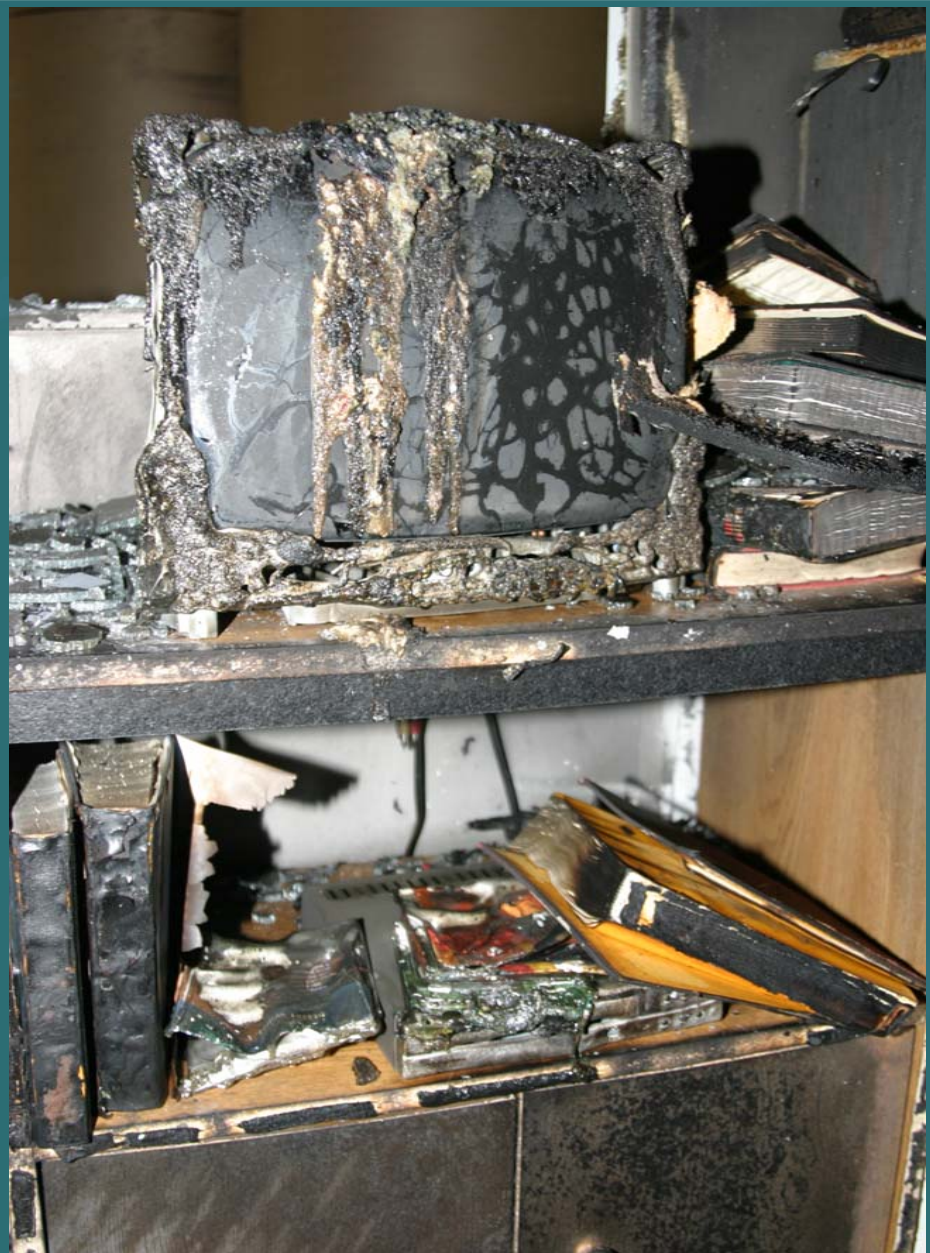

Date
Test No.
Ser. No.

Unprotected

Protected
(Sprinklered)

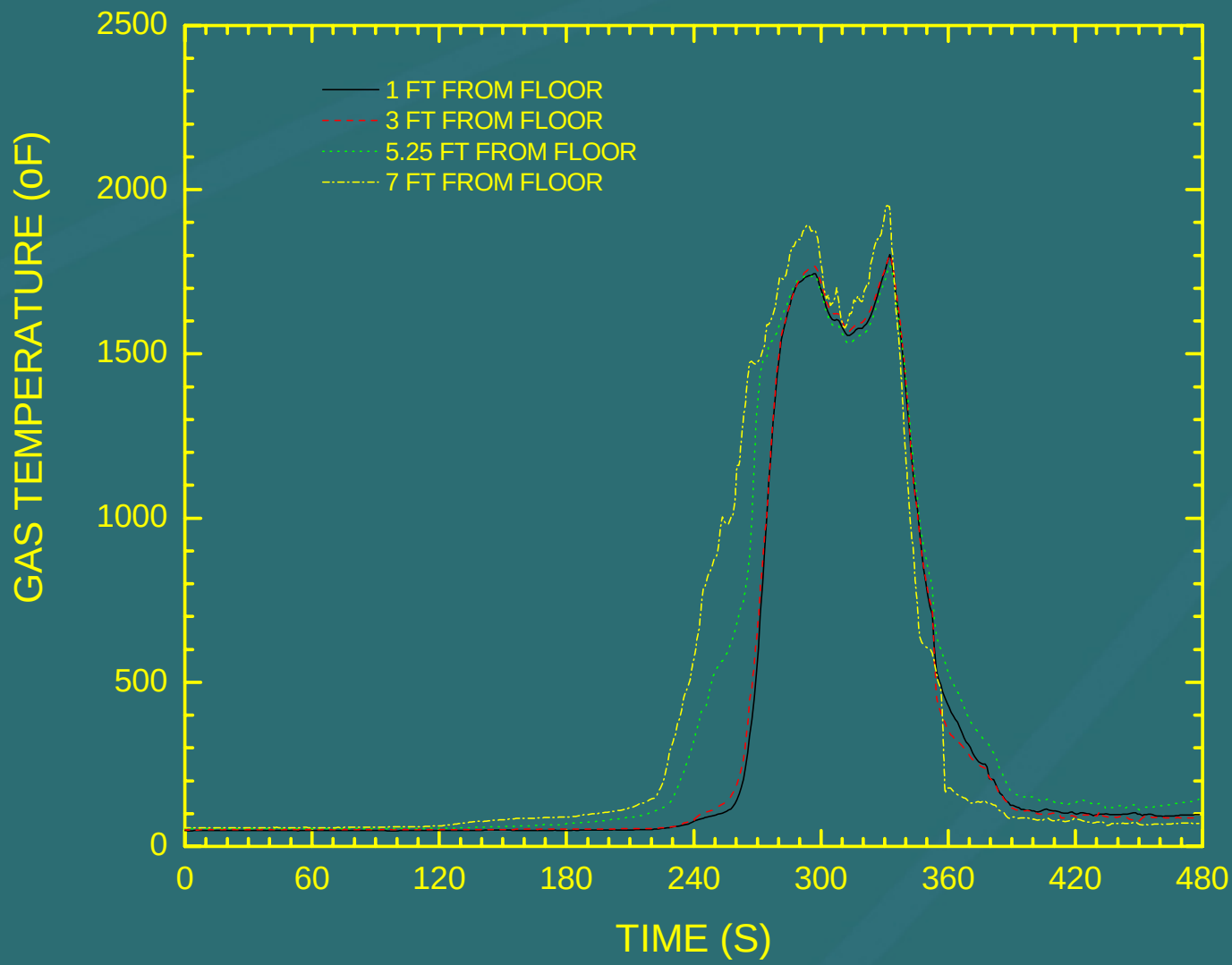

Date
Test No.
Ser. No.

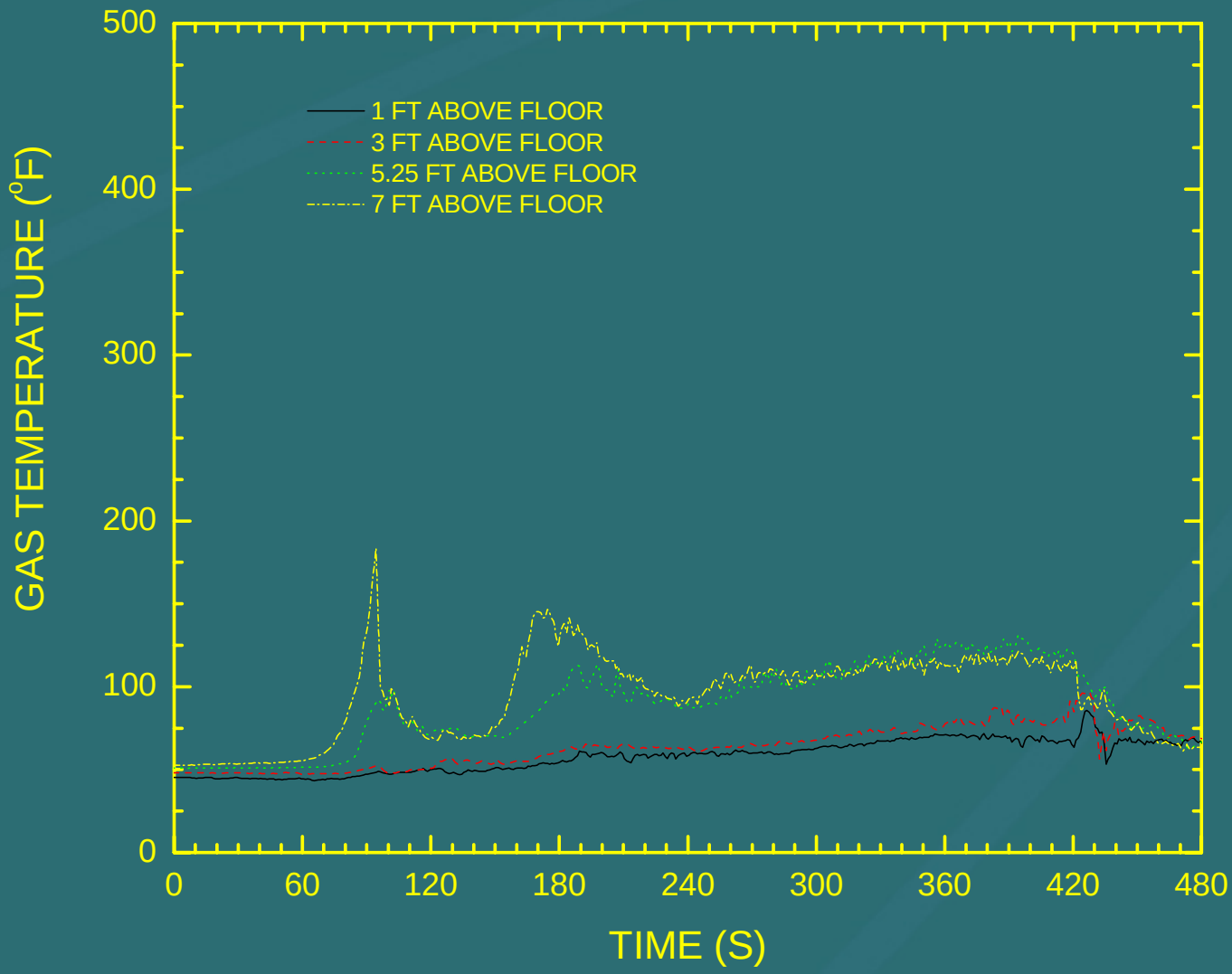





IN THE NAME OF THE FA
DANIELLE STEEL WANDERLUST
TG 4-56


ECONOMICS


1 FT FROM FLOOR
3 FT FROM FLOOR
5.25 FT FROM FLOOR
7 FT FROM FLOOR
GAS TEMPERATURE (oF)
TIME (S)
0
500
1000
1500
2000
2500
0
60
120
180
240
300
360
420
480


GAS TEMPERATURE (°F)
500
400
300
200
100
0
1 FT ABOVE FLOOR
3 FT ABOVE FLOOR
5.25 FT ABOVE FLOOR
7 FT ABOVE FLOOR
0
60
120
180
240
300
360
420
480
TIME (S)

SUMMARY
COMPARTMENT CONDITIONS

	TEST 1	TEST 2
CONDITION	**UNPROTECTED**	**PROTECTED**
MAXIMUM EYE-LEVEL AIR TEMPERATURE	***1769 ºF***	***131 ºF***
MAXIMUM 3-FT ELEVATION	***1801 ºF***	***97 ºF***
MAXIMUM HEAT RELEASE	***4600 kW***	***938 kW***

RESULTS

- ***SPRINKLERS PROVIDE IMPROVED LIFE SAFETY***
  - ROOM CONDITIONS
  - TIME TO EGRESS

- ***SPRINKLERS REDUCE PROPERTY DAMAGE***