

power to the fuel pumps, (b) could not be sustained long enough, or generated too little heat, to raise the temperatures of the steel and concrete structure to the point of significant loss of strength or stiffness, and/or (c) would have exhausted smoke from the exhaust louvers, which was not observed.

- A diesel fuel spray fire on Floor 5 would have been less damaging than a pool fire. To be a spray, the fuel escape rate would have been too small to heat Column 79, even if it hit it directly.
- The day tanks on Floors 7, 8, and 9 contained diesel fuel equivalent to only a few percent of the office combustibles on those floors. Safeguards in the fuel delivery system would have prevented the tanks being re-supplied. The supply tanks for the day tanks on Floors 8 and 9 were found to be nearly full several months after the collapse of WTC 7. The heat from a day tank fire on Floor 7 would not have reached the transfer trusses or Column 79.
- The absence of diesel fuel fires on Floor 5 was consistent with the information from interviews that sometime after 1:00 p.m., OEM and FDNY staff climbed the east stairway of WTC 7 and did not see much damage on Floors 4, 5, or 6 from their viewing location. They made no mention of fire, heat or smoke.
- The transfer trusses and a girder were isolated from the diesel fuel lines and the generators by masonry walls. No mechanism for indirect heating of Transfer Truss 1 or 2 was found.
- There was no evidence that the fires spread from floor to floor, except, perhaps, just prior to the collapse of the building.
- The fires on Floors 7 through 9 generally spread clockwise from the southwest corner of the floor. The fires on Floors 11 through 13 generally spread counterclockwise. All the fires were burning in the northeast region at around mid-afternoon.
- Simulations of the fires using the Fire Dynamics Simulator (FDS) generated air temperatures comparable to those in large-room fire tests of office workstations. Compared to the actual fires, the simulated fires followed the same general paths. The simulations of the Floor 12 fires (and thus the derivative Floor 11 and 13 fires) may have overestimated the duration of the fires and the fraction of the burning near the north face windows, relative to the fraction of burning in the interior of the tenant space.
- Doubling the estimated combustible fuel load on the open-landscaped Floor 8 from 20 kg/m<sup>2</sup> (4 lb/ft<sup>2</sup>) to 40 kg/m<sup>2</sup> (8 lb/ft<sup>2</sup>) led to a predicted fire spread rate that was slower than actually observed. Decreasing the combustible fuel load on the highly partitioned Floor 12 from 32 kg/m<sup>2</sup> (6.4 lb/ft<sup>2</sup>) to the estimated load on Floor 8 had no significant effect on the fire spread rate. This indicated that the overestimation of burning duration was less likely due to overestimation of the fuel load and more likely due to excess burning (of combustible vapors from fire-heated office furnishings) near the windows relative to the burning in the building interior.