

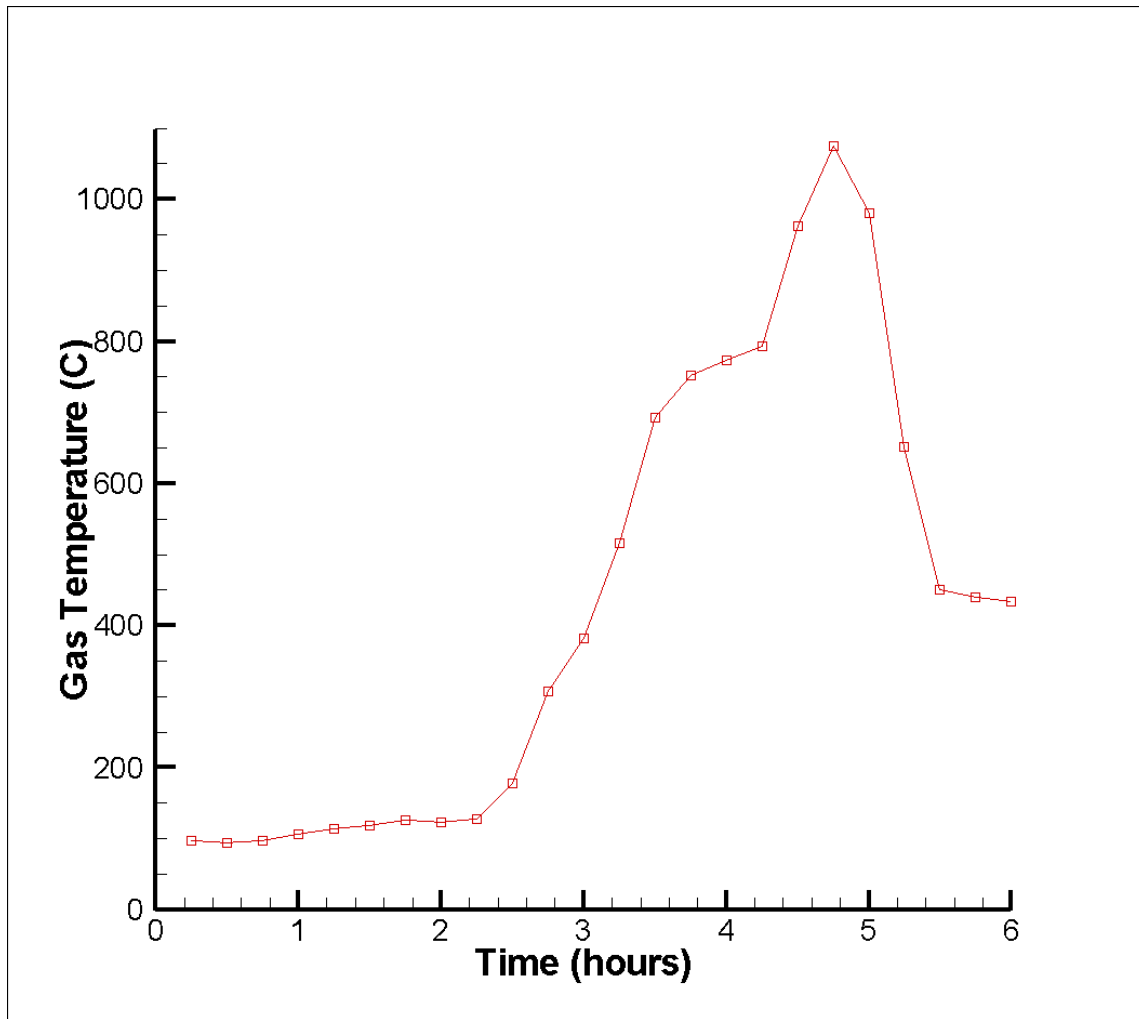


Figure 10–1 Gas temperature time history for Floor 12 near the ceiling by Column 79 and the northeast corner.

The thermal analysis performed for the reconstruction of the WTC 1 and WTC 2 fires indicated that significant heat transport from a floor with a flashed over fire did not extend past the adjacent floor. As indicated in Chapter 9, no fires were simulated on the 14th floor, and the analysis in Section 9.2.1 indicated that there was no significant fire on the 5th or 6th floor. Thus, it was expected that the output from the FSI would indicate heating from the 6th floor to the 14th floor.

The dimensions and structural formulation of the exterior and core columns and the concrete floor slabs were those provided for WTC 7 (Chapter 2). The exterior surfaces of the exterior and core columns were covered with a mean Monokote MK-5 insulation thickness of 22 mm (7/8 in.); the concrete slabs were protected by 9.5 mm (3/8 in.) thick Monokote MK-5 on their bottom face only; the beams and girders were protected by 13 mm (0.5 in.) of Monokote MK-5 (Chapter 2). The damage from the debris from the collapse of the towers was not included in the simulations. This was because the thermal effect of the damage would have been local to the southwest portion of the building, while the eventual collapse initiated in the northeast region of the building. Otherwise, the thermal response modeling of WTC 7 was identical to that performed for the WTC towers.