

Unlike the rest of the complex, power supply to WTC 7 was not routed through the primary distribution center, since the Con Edison substation was in the same building. Table A-3 suggests that some utility power was available to all of the buildings, including WTC 7, until almost 10 a.m. After that time, although utility power was available at the Con Edison substation, it was not available to consumers in WTC 7. However, since WTC 7 was still intact at that time, the loss of all utility power would have activated the emergency generator automatic transfer switches to provide emergency power. The two WTC 7 900 kW emergency generators were equipped with auto engine starting controls, and some emergency generation was running in WTC 7 before the building's eventual collapse in the afternoon.²

Power was still coming into the WTC Con Edison substation after 10 a.m. since the 138 kV circuits from the transmission switching station were still energized (and some of the feeders supplying the Cortland network were still functional) since circuit breakers designated CI-1 through CI-5 were still closed. (See Table A-3.) Auxiliary power at the Con Edison substation was also still available through two 500 kVA transformers (breaker L&P1 was still closed) fed from the 13.8 kV busbars in both SS #1 and SS #2 even though power to the rest of the building was lost at 10 a.m.

At 4:33 p.m., the utility control center made a decision to open all the remaining Cortland circuits and isolate the WTC 7 substations by opening the 138 kV circuit breakers. This decision was made about two hours after FDNY officers decided to completely abandon WTC 7 and the final order was given to evacuate the site around the building (Chapter 6). Opening the Cortland circuits resulted in the loss of auxiliary power at the Con Edison substation, but because the primary power supply had already been lost to the rest of WTC 7 at 10 a.m., this additional action would have had no effect on the rest of WTC 7 (including emergency generation if it had still been available). The Con Edison substation was also equipped with emergency battery back-up which was designed to operate emergency lighting and fire protection systems for a limited period of time in the event that all other power was lost to the substation.

A.4.2 Tripping Events, Substation #2

Analogous information for SS #2 is provided in Table A-4, from which it may be seen that some circuits to the Battery Park network and one to Park Place were lost during the morning due to the automatic operation of the protective relaying. At 4:33 p.m., in concert with the actions taken in SS #1, Con Edison decided to isolate the remaining Battery Park and Park Place feeders and to shut down SS #2 by opening the 138 kV breakers CI-6 through CI-9 supplying the transformers in SS #2.

A.4.3 Isolation of the 138 kV Network

As illustrated in Fig. A-3, the five circuits supplying SS #1 and SS #2 from the transmission switching station were also supplying the Seaport substation. At 4:33 p.m., when Con Edison decided to shut down the WTC substations, all of the 138 kV substation breakers were opened at SS #1 and SS #2. However, two of the feeders (38M13 and 38M15) were left energized from the transmission switching station (Con Edison 2005i). This meant that although both substations were effectively shut down, live terminations were present at the supply side of circuit breakers CI-3 and CI-5 (in SS #1) and CI-7 and CI-8 (in SS #2). This was done with the hope of preventing the Seaport substation also from losing all power, which would have led to the loss of power to consumers fed from that substation in the Fulton Network (Con

² WTC 7 Interviews 1, 2, 3, January, 2004.