6 Exterior Mechanical and Electrical Equipment

Hurricane Georges caused few problems to Puerto Rico's exterior-mounted mechanical and electrical equipment. The most commonly observed problem was blow-off of exhaust fan cowlings, as shown in Figure 6-1. Many residences and other buildings have water storage tanks on their roofs and most appeared to have performed well. However, as documented in Section 5.2.1, one tank blew off and damaged a hospital. Solar hot water heaters are located on many buildings and they also performed well. One solar heater that did not is shown in Figure 6-2.

FIGURE 6-1 This exhaust fan lost its cowling.

FIGURE 6-2 This roof had several solar hot water heaters that successfully weathered Hurricane Georges. However, the unit in the foreground was damaged.

During Hurricane Georges, an emergency generator at a water treatment plant was flooded by a nearby river, rendering the generator unusable. As shown in Figure 6-3, the water rose approximately 2 feet above the generator room floor.

FIGURE 6-3 Flood water entered this generator room and reached a height of about 2 feet, as indicated by the red line. This facility is located in Jayuya.

Several residences in Puerto Rico have overhead electrical service to a service mast mounted on a free-standing concrete pylon. From the service mast to the building, the service was underground, as shown in Figure 6-4. The advantage of this type of service mast versus one mounted through the roof is that if the mast deflects or is torn away, the roof is not damaged.

FIGURE 6-4 This service mast is mounted on a concrete pylon. This form of service connection was successful in eliminating roof damage when the overhead service blew down.