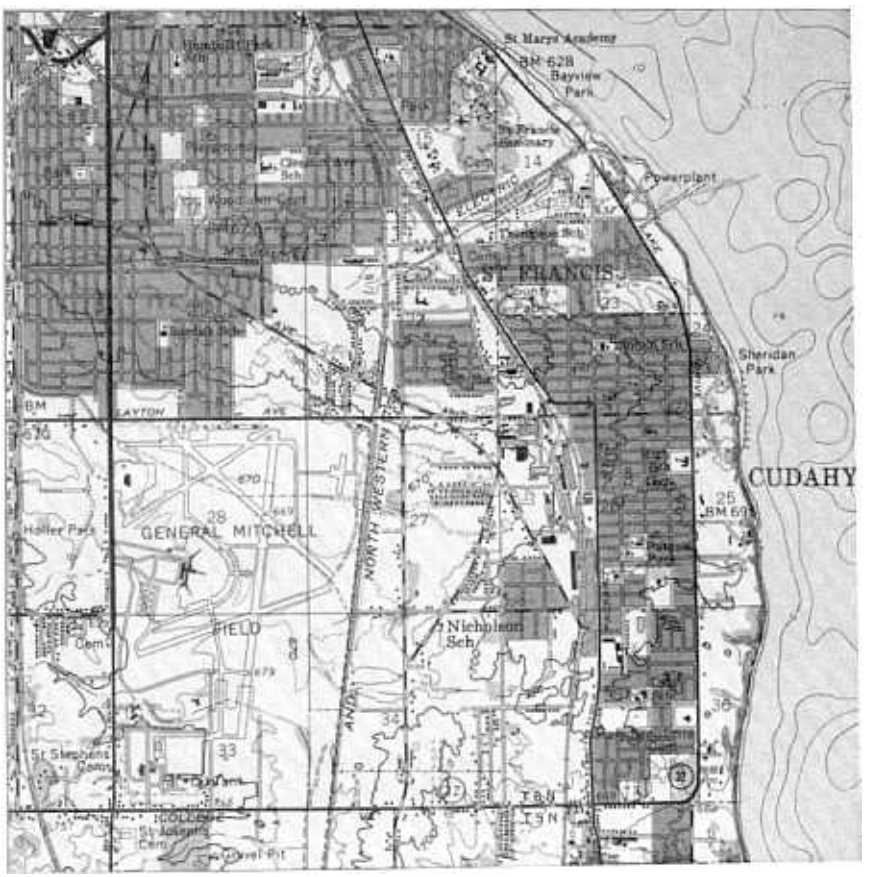
Title: St. Francis Power Plant Site

Location: NE 1/4, NE 1/4, Sec. 23, T. 6 N., R. 22 E., Milwaukee South 15' Quadrangle, Milwaukee County. Enter either through the north end of Sheridan Park or cut across the field owned by the Power Company. The best exposure is about 100 yards south of the Power Company fence. Permission is probably not necessary unless drilling or similar activity is planned.



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Description: This bluff has a fairly high erosion rate and when lake levels are high, water is against the base of the bluff throughout. The power plant to the north acts as a groin and slows longshore drift (sediment movement) from the north (Mickelson, et al., 1977). The plant is protected by rip-rap (dolomite blocks) which absorb wave energy and slow erosion. Because the blocks break up in time this type of protection needs continuing maintenance. To the south, in Sheridan Park the effect of groins can be observed.

The bluff face exhibits several tills and stratigraphic relationships and it is worth spending several hours examining the deposits carefully and trying to work out geologic history (Mickelson, et al., 1977, Appendix 3). Note particularly:

1. The lower most unit is a sandy, bouldery till much like the mid-Woodfordian tills elsewhere in southern Wisconsin. Near the top of this unit, a somewhat more silty till with large boulders is present. Was this from the same glaciation?

2. A concentration of boulders overlies these units and represents a period of wave erosion. This means that for a period of time after ice retreat, lake levels were much as they are today. Lake level then rose and deposited sand and mixed silts and clays.

3. Above this another till is present representing another ice advance into the area. Can you find an erosional lag on this till?

4. A channel, probably eroded during a low stage of the lake cuts the sequence and is filled with sand and gravel. Note how this channel now concentrates groundwater flow and enhances bluff erosion.

5. These sediments grade up to silts and silty clays near the top of the bluff. In places, a thin till is present over and interbedded in these lake sediments. This means that high lake levels existed before and after the last ice advance.

6. Now climb back up to the bluff top. Note that the surface rises to the south and that this rise swings to the northwest across the road. This feature is a high shoreline (Alden, 1918, Glenwood Stage) developed just after deglaciation. As you walk southward along the bluff top, note that the uppermost lake sediments get coarser and thinner as you approach the former beach. At the crest of the rise, till is present at the bluff top.

Significance: This is the best exposure of multiple tills along the southern Wisconsin shore of Lake Michigan. It will be the subject of a M.S. thesis at Milwaukee (R. Klauk, pers. comm.).