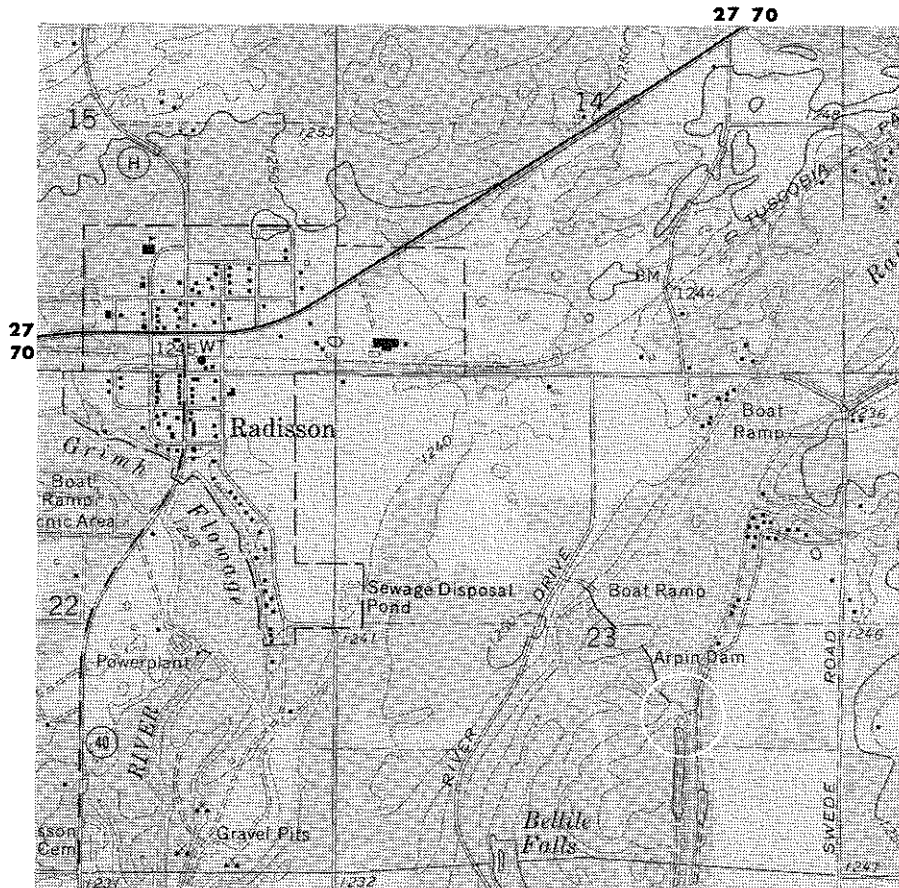


Title: Arpin Dam in Radisson - Late Porphyritic Granite

Location: River channel downstream from Arpin Dam, one mile southeast of Radisson, NW $\frac{1}{4}$ , SE $\frac{1}{4}$ , Sec. 23, T.38N., R.7W., Sawyer County (Radisson 7 $\frac{1}{2}$ -minute topographic quadrangle, 1972)



Author: M.G. Mudrey, Jr. (1978)

Description: Outcrops are reasonably abundant in the vicinity of Radisson. The bedrock consists of a coarse, hornblende-granodiorite with inch-sized microcline megacrysts generally aligned N. 50° E. Medium-grained aplite dikes up to one-foot wide trend N. 15°-35° E. The granodiorite consists of subhedral to euhedral microcline set in a groundmass of sutured quartz grains, subhedral plagioclase (An<sub>15-20</sub>), minor brown biotite slightly altered to chlorite, and green hornblende with trace amounts of apatite, epidote and zircon are found. The aplite dikes consist of equal amounts of subhedral plagioclase (An<sub>20</sub>), microcline, and anhedral quartz. Trace quantities of muscovite, chlorite and zircon are present. Van Schmus (in press) reports an U-Pb zircon age of 1,765 ± 10 m.y. for a sample from Grimh Flowage, about 0.6 miles west of this locality.

Discussion: This granodiorite, the Jennings granite, other alkalic granites, and the rhyolites of south-central Wisconsin are all late Penokean and yield ages around 1,765 m.y. For the most part, the granitic rocks are little deformed, but all yield Rb-Sr ages around 1,600 m.y. The 1,600 m.y. age is widespread. However, there appears to be no rock units or major structures related to this resetting in northern Wisconsin. Smith (1978) has determined that the Baraboo

Quartzite and the rhyolites of southern Wisconsin were metamorphosed and deformed about this time. The 1,600 m.y. age is pre-Wolf River and associated rapakivi granites, syenites and anorthosites. Some of the faulting in the area may be related to this 1,600 m.y. thermal event.

The Radisson granodiorite is similar to the Rockville Granite of Minnesota, both in petrography and in age (Keighin and others, 1972, p. 240).

References Cited:

Keighin, C.W., Morey, G.B., and Goldich, S.S., 1972, East-Central Minnesota: in P.K. Sims and G.B. Morey, editors, The Geology of Minnesota (G.M. Schwartz Volume): Minnesota Geological Survey, p. 240-255.

Smith, E.I. 1978, Precambrian rhyolites and granite in south-central Wisconsin: Field Relations and geochemistry: Geological Society of American Bulletin, v. 89, p. 875-890.

Van Schmus, W.R., in press, Chronology of igneous rocks associated with the Penokean orogeny in Wisconsin: Geological Society of American Memoir.