

Castle Rock

Castle Rock plant went through a couple of changes from conception to completion. The original plant, referred to as the Germantown Project early on due to the small town which was to be submerged by the lake backed up by the dam, was changed to Castle Rock. Both of the WRPCo dams were then named for local geographical features of the ancient lakebed they exist on.

Early prints show the power house for Castle Rock built into the sandstone cliff on the west side of the river. The operating level of the power house would have been at about the same level as the top of the rock. The actual location of the power house was moved to the east side of the river. As mentioned above, after the Federal Power Commission got involved, Harza Engineering was retained for the design and the location was changed to the present design.

The lower net head gives the turbines a lower horse power rating, so the turbines at Castle Rock are rated at 4,300 horse power under a 28 foot head. Scouring in the tailrace has increased the net head to about 35 feet since construction. Today the plant can easily produce 120% of the original power.

In 1985, a quick closure of the gates caused the water column to be broken in the draft tube of the No.5 unit. This created such a strong vacuum that when the water rushed back into the turbine, a blade was broken. Because of this, the machine had to be completely disassembled. After evaluation, new runner blades were installed, the stator was rewound for a higher insulation value and the unit completely re-assembled. This hydro is now capable of generating about 140% of the original nameplate power.

Castle Rock has been operated remotely from the PDC at Wisconsin Rapids since 1981. The Power Dispatcher can start, stop and change load on any unit via the SCADA system. Sophisticated monitoring alarms the Dispatcher of any unusual conditions at the plant, including fire and security.