

## **SCHEDULE 6-4**

### **Description of Primary Structures**

The main structures of the Wuskwatim Generating Station include the Spillway, Intake/Powerhouse/Service Bay Complex, Non-Overflow Gravity Dam, Main Dam, North Dyke and the Transition Structure. These structures are described generally below.

#### **Spillway**

The Spillway will be a three bay concrete structure equipped with vertical lift, fixed-wheel steel gates and various mechanical and electrical systems needed for its operation and control. The Spillway will be located to the north of the Powerhouse. The two structures will be linked by a fixed concrete Non-Overflow Gravity Dam (described below). The purpose of the Spillway is to provide a diversion channel during the construction period and an overflow for the reservoir during the operation period.

#### **Intake/Powerhouse/Service Bay Complex**

The Intake/Powerhouse/Service Bay Complex (the “Complex”) will be a concrete and steel structure located on bedrock, close to the north bank of the original channel of the Burntwood River. The Complex will contain three fixed-blade propeller type units where the hydraulic energy will be converted into electrical energy by means of a vertical shaft connected to generators, located above. The Complex will also incorporate intake service gates, designed to isolate each turbine for maintenance, and trash racks, designed to prevent debris from entering the intake openings.

The Complex will contain various mechanical and electrical systems, including heating and ventilating systems, domestic and fire water systems, cranes, sewage treatment, drainage systems, compressed air systems and oil storage facilities.

Access to the Complex will be by way of a service road on top of the North Dyke, the Spillway Bridge, the crest of the Non-Overflow Gravity Dam and a descending ramp to a large parking area in the tailrace area at the same elevation as the Service Bay area.

#### **Non-Overflow Gravity Dam**

The Non-Overflow Gravity Dam will link the Powerhouse and the Spillway and provide continuous access from the North Dyke to the crest of the Main Dam. The Non-Overflow Gravity Dam will include an enclosed gallery to provide weather protected passage for personnel moving between the Service Bay area and the Spillway.

The Non-Overflow Gravity Dam will house a standby diesel generator and fuel storage tanks complete with secondary spill containment which will be capable of supplying the essential loads to operate gates, etc. in an emergency.

### **Transition Structure**

The south Transition Structure will be a concrete gravity structure that will connect the Complex to the Main Dam. The south Transition Structure will provide access from the intake deck to the Main Dam crest.

### **Main Dam and North Dyke**

The Main Dam and North Dyke are earth fill structures, constructed from earth and rock fill materials obtained from the local area. The Main Dam will span from the south bank of the Burntwood River above Taskinigup Falls to the south Transition Structure and the Complex. The North Dyke will close the area from the north wall of the Spillway to the north bank.