



FIGURE e4.5.4 The complete datapath for the multicycle implementation together with the necessary control lines. The control lines of Figure e4.5.3 are attached to the control unit, and the control and datapath elements needed to effect changes to the PC are included. The major additions from Figure e4.5.3 include the multiplexor used to select the source of a new PC value; gates used to combine the PC write signals; and the control signals PCSource, PCWrite, and PCWriteCond. The PCWriteCond signal is used to decide whether a conditional branch should be taken. Support for jumps is included.