The Sleep State

The Operating System sends a sleep command to the **Power Manager** when the user requests it (through the Battery desk accessory or the Finder), when the battery voltage falls below a preset level, or when the system has remained inactive for an amount of time that the user sets through the Portable control panel.

The Operating System uses the **Power Manager** to shut down power to the CPU, the ROM, and some of the control logic. Sufficient power is maintained to the RAM so that no data is lost. Before the Operating System sends the sleep command to the **Power Manager**, it performs the following tasks:

- It pushes the contents of all of the CPU's internal registers onto the stack.
- It calls all routines listed in the sleep queue to inform them that the system is about to be put into the sleep state. These routines include the device drivers for the serial ports and floppy disk drives. Each device driver must call the **Power Manager** to stop power or clocks to the peripheral device controlled by that driver. If the device contains any internal registers, the device driver must save their contents before turning off power to the device. See **The Sleep Queue** for further information.
- It pushes onto the stack the Reset vector, the contents of the versatile interface adapter (VIA) chip, and the contents of the Apple Sound Chip (ASC) control registers.
- It saves the stack pointer in memory.

While the Macintosh Portable computer is in the sleep state, the clock to the **Power Manager** is off so that the chip does no processing. On each rising edge of the 60 Hz clock signal (from one of the Macintosh Portable computer's logic chips), a hardware circuit restores the clock signal to the **Power Manager**. The **Power Manager** updates the time in the real-time clock and checks the status of the system to determine whether to return the Macintosh Portable to its operating state. The **Power Manager** checks for the existence of the following conditions

- A key on the keyboard has been pressed.
- The wakeup timer is enabled and the time to which the wakeup timer is set equals the time in the real-time clock.
- An internal modem is installed, the user has activated the ring-detect feature, and the modem has detected a ring (that is, someone has called the modem).

Note that use of the mouse or trackball cannot be detected by the **Power Manager**.

If the **Power Manager** does not detect any of these conditions, it deactivates its own clock until the next rising edge of the 60 Hz clock signal. If the **Power Manager** does detect one of these conditions, it restores power to the CPU, ROM, and any other hardware that was running when the computer entered the sleep state. Then the **Power Manager**'s wakeup procedure

reverses the procedure that put the Macintosh Portable into the sleep state, including calling each routine listed in the sleep queue to allow it to restore power to any subsystems it controls.