The following sections describe the steps that are used if dual AC power is lost to the entire frame.

Power loss

When an on-battery condition shutdown begins, the following events occur:

1. All host adapter I/O is blocked.
2. Each CPC begins copying its NVS data to internal disk (not the storage drives). For each CPC, two copies are made of the NVS data. This process is referred to as fire hose dump (FHD).
3. When the copy process is complete, each CPC shuts down.
4. When the shutdown in each CPC is complete, the DS8880 is powered off.

Power restored

When power is restored, the DS8880 needs to be powered on manually, unless the remote power control mode is set to *automatic*.

Note: Be careful before you decide to set the remote power control mode to *automatic*. If the remote power control mode is set to *automatic*, after input power is lost, the DS8880 is powered on automatically as soon as external power becomes available again. For more information about how to set power control on the DS8880, see the IBM Knowledge Center at the following website:

`https://www.ibm.com/support/knowledgecenter/ST5GLJ/ds8000_kcwelcome.html`

After the DS8880 is powered on, the following events occur:

1. When the CPCs power on, the PHYP loads and power-on self-test (POST) runs.
2. Each CPC begins the initial microcode load (IML).
3. At an early stage in the IML process, the CPC detects NVS data on its internal disks and restores the data to destage it to the storage drives.

3.3 Data flow in the DS8880

The DS8880 connectivity between the CPC and the I/O enclosures uses the many strengths of the PCIe architecture.

For more information, see 2.3.5, “Peripheral Component Interconnect Express adapters” on page 47.

3.3.1 I/O enclosures

As shown in Figure 3-1 on page 78, each CPC on a DS8886 is connected to all four I/O enclosures (base frame) or all eight I/O enclosures when the first expansion frame is installed, by PCI Express cables. This configuration makes each I/O enclosure an extension of each processor complex. The DS8884 has a base of two I/O enclosures, and a maximum of four.