Q. In reference to hardware and software upgrades, please provide specifics of the $525,000 to be spent and the cost per unit for items. Provide reasons why the existing disk storage requires replacement. The type of upgrades required for the Unix operating system and SCADA software (sic).

A. Table 1 provides a breakdown of the proposed $525,000 expenditure on hardware and software upgrades to the SCADA computer system set out in Schedule B, page 81 of 82.

Table 1
SCADA System
Hardware and Software Upgrades

Component	Description	Cost
Disk storage replacement	Replace disk storage technology required by the SCADA system to operate and record data events regarding the electrical system.	$79,000
Data backup system upgrade	Add a tape drive at the Topsail Road location to ensure effective SCADA system backups.	16,750
SCADA software and Unix operating system upgrade	Upgrade the SCADA system software and the UNIX operating system on which it runs.	417,500
Global Positioning System Time Server	Add a Global Positioning System (GPS) time server at Duffy Place to ensure the exact synchronization of recorded electrical system events between SCADA servers at Topsail Road and Duffy Place.	11,750
Total		**$525,000**

It is necessary to replace the existing SCADA system disk storage for the following reasons:

- The existing technology has reached the end of its useful life and is currently being supported by the vendor on a best efforts only basis.
- The capacity of existing disk storage is not sufficient to meet the storage needs of the SCADA application.
- The existing technology lacks the fault tolerance and automatic recovery capabilities necessary to ensure the consistent and high availability levels required for the SCADA application.

Details of the upgrades required for the Unix operating system and the SCADA software are as follows:

- As of September 2003, Hewlitt Packard (HP) will no longer support the version of the UNIX operation system currently used for the SCADA system. This project will involve upgrading the Unix operating system to a version that is fully supported by HP.
- Upgrading the Unix operating system will also necessitate an upgrade of the SCADA application because the version of the SCADA application currently in use is not compatible with the upgraded version of the UNIX operating system.