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Pacific Valley School Action Plan

January 19, 2006

Background: On January 17, 2006, I inspected the entire electrical system at Pacific Valley School. I confirmed numerous serious safety concerns. We have developed the following action plan to systematically remove these safety problems. At the time of the inspection, I interviewed key District personnel to ascertain logistical considerations that have been integrated into this plan.

The plan is divided into these categories: 1. Work to remedy the most serious concerns, 2. Work to remedy moderate concerns, 3. Work to improve the ease and efficiency of system operation, and 4. Work to bring the system up to modern standards and NEC compliance. With the logistical considerations presented here, categories 1 through 3 can be accomplished while school is in session.

Phase 1: This phase includes:

1. Upgrading PV wiring to include short circuit and ground fault protection.
2. Upgrade PV system with charge control
3. Rewire inverters to allow power to both phases and to allow better AC battery charging.

Timeline: This can be accomplished as soon as the proposal is approved and parts are ordered. Lead time for these parts is one or two weeks.

Cost: We are working on a bid at this time.

Phase 2: Involves improvements to the generator shed. Includes:

1. Relocating all equipment from partition to the East wall
2. Replace transfer switch with more modern electro-mechanical device.
3. Correct improper neutral wiring.

Time line: This work can occur during the school year. We would do preparatory work during the school week and final relocation of switch gear on a Friday when we understand school is not in session.

Phase 3: Improves safety and reliability of generator operation.

1. Install generator remote start to allow indefinite periods of operation after school hours.
2. May also allow system to operate with only intermittent runnign of generator during the school day.
3. Install manual remote starting of generator so no personnel is required to enter the generator shed to start the generator.

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4. Investigate installing alarm functions to allow notification of key employees in the case of system problems while campus is vacant.

Timeline: This can also be done while school is in session. Testing will occur on a Friday.

Phase 4: Brings remainder of system into compliance. Involves:

1. Install new Outback quad-stack inverter system. Would most likely fit into existing equipment room.

2. Install new PV modules and mounting structure. We highly recommend the building be re-roofed prior to this.

Timeline: If the district can cordon off the area between the main building and the administrative offices, this work can be done during the school year. Roofing needs to be coordinated with weather forecasts. Roofing may not require that the existing roofing be entirely stripped, maintaining water tight integrity during construction.

Cost: We can process a bid at the request of the district. We would prefer that Phases 1 through 3 be initiated prior to submission of our bid, allowing us to become more familiar with the facility and the District's long range plans.

This action plan is by nature a work in progress. The above outline gives a fairly general plan that can be refined as work progresses. We suggest that Phase 1 be initiated promptly.

William Miller

End of action plan
