Regarding power interruption/stall

M. Franz, Jan 27, 2023

When the line power goes down, the azimuth hydrostatic bearing pumps quit running. They do not resume running if and when the power comes back on. This is deliberate, as when the power is down, Step 1 (“mushroom” knob) remains pulled out (<ON>) and Step 2 (selector switch for pumps) also remains <ON>. The pump selector must be turned <OFF> and the mushroom knob pushed in (<OFF>) manually, and then the normal startup sequence used, to resume operation. The programming requires manual intervention to restart the pumps for two reasons:

- The operator is responsible for verifying that there is sufficient oil flowing to the pumps before

they are allowed to start (“mushroom” knob pulled out; operator verifies oil flow visually, via the flow indicator near the oil tank and recirculating pump). If there is no, or insufficient, flow, starting the pumps would likely lead to their self-destruction in short order.

- A power outage that lasts longer than a fraction of a second inevitably leaves the telescope in an

indeterminate state. It is patently unsafe to resume the delivery of high-pressure hydraulic fluid to the azimuth bearing, and also to hence “float” the telescope without the operator deciding it is safe to do so.

I don't remember how the original PLC-controlled pump/chiller operation was sequenced, but it was replaced with the current system circa A.D. 2000. The system has behaved as described above since then.

I believe I have witnessed the telescope continue to operate through power glitches, but these were a fraction of a second in duration (and also might not have involved all three phases of the line power). However, “...just a few seconds” of outage is more than sufficient for everything (amps, pumps) to drop out and stay out.