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To: Deuterium Array Group

From: Alan E.E. Rogers

Subject: Array structure wind loading etc.

1] Wind loading

The highest wind velocity we are likely to see within 10 feet of the ground is 75 m.p.h. at this velocity the wind pressure is about 15 psf. The area of the array frame is 210 sf so that the maximum possible force is 3150 lbs. The ground screen is made of mesh with about 10% filling factor so that the maximum wind force is likely to be only about 300 lbs. To ensure that the array will not blow over in the wind we should stake the 4 legs into the ground. The forces are small enough that concrete footings are not necessary. While it is highly unlikely that an array will be lifted or toppled by the wind I suggest 2 stakes per leg driven in at crossing angles so that they cannot easily pull of the soil.

2] Thermal

The top covers of the receiver area need to be painted on the outside with IR reflective paint (Goldstone #6) to minimize the heat absorption.

3] Height of the receiver above the ground

The legs of the array should be long enough to keep the receiver at least 2 feet off the ground for easy access and to avoid problems with snow.

4] Elevation adjustment

It should be possible to adjust the pointing elevation of the array for 90° (zenith), 85° and 20° by changing the length of the back legs. We will most likely only point at the zenith.

5] Fence opening

The seam of the fence should be on the south side to make it easy to access the array and operate at 20° elevation without the south side of the fence.