Solar Power Plant and Substation Design Project

IOWA STATE UNIVERSITY and BLACK AND VEATCH

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Safety Moment

Eye Protection

Impact:

- ~2000 daily job-related eye injuries in U.S.
- 1/3 of these injuries are treated in hospitals

Causes:

- Striking / Scraping
 - Small Particles(dust, cement chips, wood chips)
 - Large Objects
- Penetration
- Chemical and Thermal Burns

Solutions:

- Wear appropriate personal protective eyewear
 - Goggles
 - Face Shields
 - Full Face Respirators





New Technology

Genap Energy Cover

What is it

It is a flexible cover that able to conserve space while generating power

Before:

 Horticulturists would use foil to cover their water storage and that foil would have to be replaced frequently to prevent Algae growth.

After:

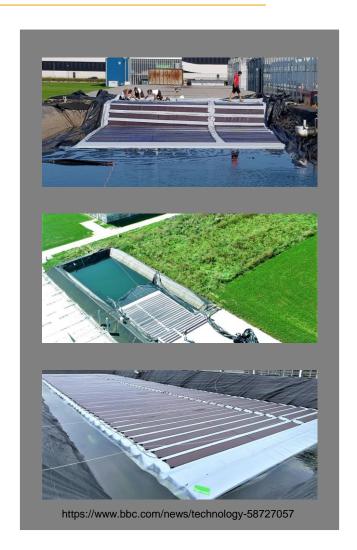
- With the new technology, they are able to now have a single cover that can be re-usable and continue the prevention of algae growth.
- Now a source of energy as well as now they have solar panels integrated into the cover.
- Floating solar panels were are not a new technology, but the difference in this design is that it now allows ease of maintenance without tons of money to be spent.

Design

- Panels are angled at 8 degrees
- Space between rows is adequate enough to allow the film to roll up.

Future:

• Still in development but plan to increase peak power yield >120 Wp/m^2.



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