



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



<https://www.allaboutvision.com/safety/safety-glasses.htm>
<https://www.cdc.gov/niosh/topics/eye/default.html>

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 $>120 \text{ Wp/m}^2$.



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