Trough Workshop
FY00
Heat Collector Element
Task Plan

August 16-18, 1999

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HCE Task Justification

- **HCE critical component in solar-to-thermal conversion - most significant current technical issue - 20% - 25% of SCA first cost**
- **HCE thermal performance driver in solar field sizing and thus cost**
- **HCE thermal performance f(t) - directly impacts production revenue**
- **HCE durability - impacts overall O&M costs**

Heat Collector Element Task Objectives

A.) Analyze and Assess Current HCEs

B.) Improve Current HCE design

C.) Develop new concepts that addresses:
durability, cost, performance

Heat Collector Element Task Objectives -Activities

A.) Analyze and Assess Current HCEs

1. Understand HCE requirements for each SEGS and Troughs in general

   Performance, Cost, Durability

2. Evaluate materials and components

3. Perform cost / performance assessment study

Heat Collector Element Task Objectives - Activities

B.) Improve Current HCE design

1. Understand HCE requirements for each SEGS and Troughs in general

   Performance, Cost, Durability

2. Assess glass-to-metal seals in Evacuated HCEs

3. Assess / monitor / removal of hydrogen infusion into annulus

4. Continue ongoing monitoring of HCEs at SEGS

Heat Collector Element Task Objectives - Activities

C.) Develop new HCE concepts that address durability, cost, performance

[Goal: Within 3 years develop HCE for new plants]

1. **Investigate alternative glass-to-metal seal concepts**
2. **Investigate new Manuf. Techniques / Methods to lower cost & improve durability**
3. **Examine "NEW / Creative" Concepts ...**
4. **Produce Advanced - Evacuated HCE**

Heat Collector Element (HCE) Task

Objectives	FY99	00	01	02	03
A.) Analyze and Assess Current HCEs	*****				
B.) Improve Current HCE design		******			
C.) Develop new HCE concepts		**********	**********		