



## **Stennis Space Center**

Power Management & Control, Inc.<sup>1</sup> (PMC) was selected to evaluate performance test results (based on data collected by Johnson Controls, maintenance contractor) of an air conditioning system employed to provide comfort cooling for the Visitor Center at the NASA facility in Picayune, Mississippi.

The test consisted of monitoring the energy requirements of a chilled water system for seven days prior to the addition of Compress Shield (polarized refrigerant oil additive) to establish a base line.

After treatment of the chilled water system with Compress Shield, similar tests were performed for seven days to compare the energy requirements of the system after treatment with Compress Shield.

Data was then collected for an additional thirteen days to demonstrate how the cooling system performed after the product had fully coated the interior surfaces of the system.

The data was then submitted to PMC for analysis. An engineering analysis of the data revealed that the addition of Compress Shield caused an energy efficiency increase of 16% during the treatment period. When compared to the base line period under almost identical conditions, the system was 8.8% more efficient only three days after addition of Compress Shield.

Comfort cooling for the Visitor Center consists of a 75 ton and a 50 ton reciprocating chilled water system with one lead and one lagging compressor. Monitoring equipment was installed on the system to record the energy requirements of the system in an "as is" condition. Upon completion of data collection in the "as is" condition, the system was then treated with Compress Shield, a polarized refrigerant oil additive (PROA).

The September 4, 1997 base line conditions were similar to the September 19 treatment conditions. The September 19 treatment data showed an 8.8% improvement in efficiency after only three days of treatment.

The September 17, 1997 to September 28, 1997 treatment data was compared to the September 3, 1997 to September 9, 1997 base line data. The conditions were similar,

<sup>1</sup> PMC is a consulting engineering firm that specializes in energy management and

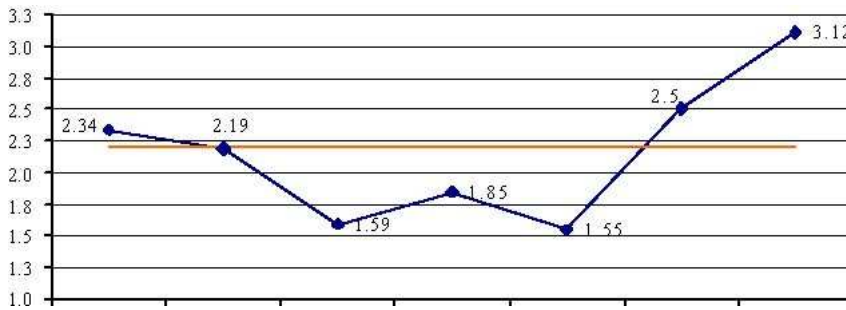
environmental engineering. Since 1979, PMC has provided its clients with energy management services that include energy audits, technical analyses, energy coordinator training, project design and project oversight for energy conservation retrofit, and energy conservation product analyses for confirmation of energy savings.

although the treatment data had a slightly higher average temperature. This data revealed that the average efficiency improvement was 13.8%.

The overall average treatment data was compared to the average non-treatment data. This data revealed that the efficiency, due the treatment, had improved 16%.

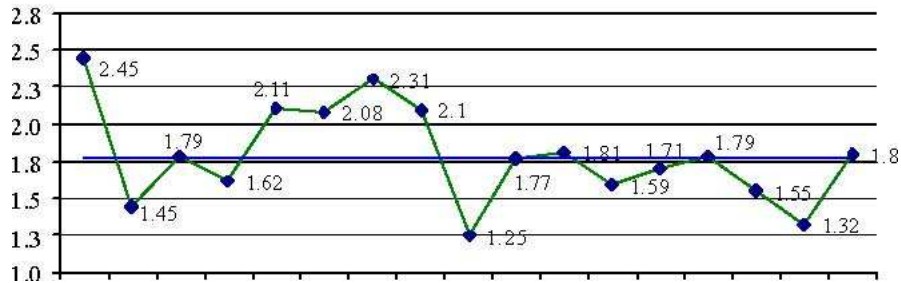
Based on the test data and information provided to PMC, there does appear to be a significant increase in performance (ranging 8% to 16%) by the addition of Compress Shield additive to the air conditioning system used in this study.

### Baseline Data



9/3 9/4 9/5 9/6 9/7 9/8 9/9 Baseline Average

### Post Treatment Data



9/20 9/21 9/22 9/23 9/24 9/25 9/26 9/27 9/28 9/29 9/30 10/1 10/2 10/3 10/4 10/5 10/6



Post Treatment Average