



# 2 0 0 1 MISSOURI TEAM QUALITY AWARD RECIPIENT

## B61 POWDER COATING TEAM at Honeywell FM&T in Kansas City

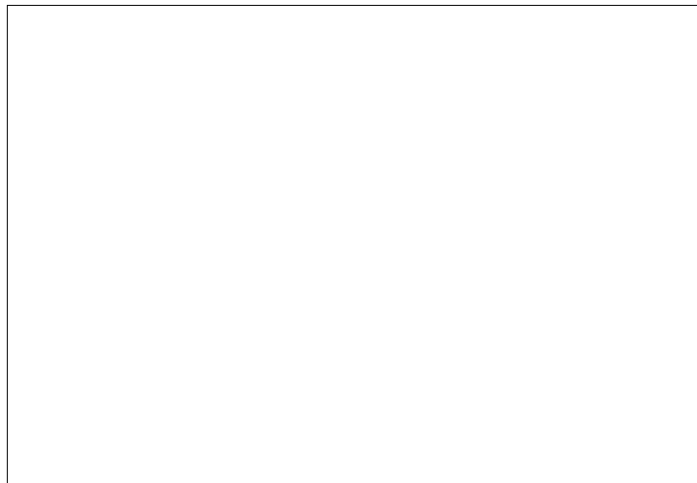
### PROFILE

Honeywell International, a prime contractor for the U.S. Department of Energy, National Nuclear Security Administration (NNSA), manages and operates the Kansas City plant, a state-of-the-art facility that manufactures a wide array of mechanical, electrical and engineered material components for our nation's defense program. Honeywell Federal Manufacturing & Technologies, (FM&T) employs over 3,000 associates at facilities in Kansas City, Missouri and Albuquerque and Los Alamos, New Mexico.

### OPPORTUNITY FOR IMPROVEMENT

Honeywell bases all operations on a foundation of Six Sigma Plus principles. The Six Sigma Steering Committee, made up of senior management, union leaders and major stakeholders, chartered the formation of a Six Sigma team to evaluate production painting of B61 components. All metal surfaces of the B61 weapon are painted prior to delivery to the customer. Other sites within the NNSA complex also used the same liquid paint system and depend on FM&T for guidance regarding production painting.

Within the Production Painting area, a baseline situation existed in which demand for painted B61 weapon components was increasing dramatically; the current liquid-based paint system was difficult and time-consuming to use; the cost of ensuring paint quality was high and non-value added; and use of the liquid paint system generated hazardous waste and air emissions.



Given all these concerns, it was imperative that the paint situation be scrutinized and that high quality, high value solutions be generated.

### TEAM ACTIONS

A standard Six Sigma approach was applied to B61 production painting. The team performed thought process mapping and brainstorming first to determine what types of information were required to fully establish and document the baseline painting situation. As part of the brainstorming process, questions were also asked regarding possible alternatives and what benefits could logically be expected from those alternatives.

The team used process mapping to map the entire B61 painting system in significant detail so that extensive information could be extracted for all factors involved in the process. Information was collected regarding material costs for paint and support solvent, flow time of the product through the system, labor time involved with each process step, hazardous waste created in each operation, VOCs released and oven curing costs. Data for each of these factors were collected for both the current liquid-based paint system and the proposed alternative powder coating system.

### RESULTS

The project has met or exceeded all established objectives. Eliminating seven non-value-added process steps improved the process and generated a cost savings of \$609,706. Production painting flow time of B61 components was reduced by over 90%, allowing significantly increased schedules to be successfully met. Eliminated VOC air emissions and hazardous waste amount to over 24,000 pounds, including the elimination of three materials that contain known carcinogens. The switch from liquid paint to powder coating has been enthusiastically embraced by Honeywell FM&T, the customer, NNSA and its Design Agency.

### FUTURE PLANS

Based on the success of this team's efforts, future plans include moving as many paint applications as feasible from liquid paint to powder coating. The team is investigating alternate cure methods to reduce flow time, labor hours and energy costs even further. The team is applying the quality tools and team building learned in this project to the production painting of almost every other program at FM&T and have been requested by NNSA to assist other facilities in the implementation of this technology.

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