



# ENERGY SAVING PROJECT – INDUCTION LIGHTING

*A CASE STUDY OF XXXXXXXX*

January 2013



Lighting  
Revolution

## Energy Saving Solution – SOP & SPP

### Choosing the options.

Trials were carried out on a variety of lighting solutions. Ultimately, Induction lamps of varying power ratings were used in the solution.

### What was converted?

400W Mercury Vapour lamps were converted to a 125W and 250W Induction high bay lamps.

### The results.

<b>Total lamps changed:</b>	820 x 400W
<b>Operational Hours:</b>	8 760 hours
<b>Eskom M&amp;V Initial:</b>	2 168 372 kWhrs
<b>Eskom M&amp;V After:</b>	796 065 kWhrs
<b>Savings for Customer:</b>	183 KW 1 372 307 kWhrs

### Challenges.

The lighting intervention required a solution and installation program for an operation that works around the clock. Installation, planning and lifting equipment needed to be scheduled from site and all documentation and data including daily job cards, stock requisition and NCRs had to be implemented from a site office in the facility.

Besides the standard Health and Safety requirements, there were also internal standards that are required to be met and maintained.

Finally, the actual size of the plant meant long distances to travel, install and QC during the intervention.

### Lux measurements.

Lux mapping was carried out in all the areas where a lighting source was changed. Some measurements were not possible to record due to stock being in the way but in all occurrences there was an improvement in the general lighting despite power savings in the region of 70%.

### Technology and lifespan.

Induction lamps were chosen for this application due to the long lifespan and excellent lighting efficacy.

The majority of lamps were located at high heights which meant that maintenance to repair damaged or defective lights was costing a lot in terms of time and money.

The lighting layout was designed with a narrower beam angle to provide the required lux on the floor and with a 60 000 hr estimated lifespan on the induction system, a long life is expected for these lamps.

*Lux mapping of Warehouse – pre-intervention:*



## Summary and conclusion.

Over 1.3 MWhrs are expected to be saved since the lighting intervention has been completed. Operators report that there has been a lighting improvement in lux level and the recordings bear out that truth. In all cases, the Induction lamps were supplied with glass covers to minimize the effect of forklift dust and fumes dirtying the light reflectors and affecting light performance.

In some critical operational areas, polycarbonate covers were used in place of glass to comply with HACCP and food processing requirements.

The success of this intervention has led to follow up work to complete office lighting where further energy savings have been achieved. Considering the size of the plant and project, the results achieved have been excellent and performance on site has been good.

END

