SCORPION® Case Study: Making the Same Product on Multiple Lines

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Making the Same Product on Multiple Lines

Product:  Soda Cracker

Plant:  Three plants in Central America

Problem: One company has four production lines baking soda crackers in three different plants across Central America. A new line was recently installed but the best product comes from a line that is over 20 years old.

How can the new line produce crackers that will match the quality of the older production line?
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Comparison of Oven Air Temperatures

- **Existing DGF Oven**: 7 zones x 280 ft long
- **New DGF Oven**: 6 Zones x 250 ft long

Comparison of Oven Belt Temperatures

- **Existing DGF Oven**: 7 zones x 280 ft long
- **New DGF Oven**: 6 Zones x 250 ft long

Date: December 15, 2000
Time: 14:46
User: RTS
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Total Heat Comparison

<table>
<thead>
<tr>
<th>Heat</th>
<th>Existing Oven (KJ/m²)</th>
<th>New Oven (KJ/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiant</td>
<td>1163 KJ/m²</td>
<td>730 KJ/m²</td>
</tr>
<tr>
<td>Convection</td>
<td>3205 KJ/m²</td>
<td>3215 KJ/m²</td>
</tr>
<tr>
<td>Total</td>
<td>4368 KJ/m²</td>
<td>3945 KJ/m²</td>
</tr>
</tbody>
</table>

The Difference:

37% Less Radiant Heat in the new Oven
Solution: Change the oven temperature profiles to better match the Total Heat applied to the product.

Total Heat: Increased to 4165 KJ/m²