SHOWERHEADS

Current Market Trends and Potential Loss of Savings

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CEC Showerhead Workshop

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Supported by CUWCC
What is this slide show about?

• Create awareness of new trends in shower designs that influence the usage of water and energy

• Present terminology of new shower systems

• Provide background information on regulations & interpretations

• Order of magnitude of the effect

• Discuss next steps
Overview

• Trends in shower design are to design systems and showerheads that may use more water than regulations permit
  — high flow showerheads advertised on the web
  — By having more than one showerhead
  — By having “body spas”

- No more than 2.5 gpm at 80 psig

Test procedure in DOE references ANSI / ASME A112.18.1M-1996

- California – CEC
  — Lists self reported values
Types of Showerheads

• Single head

• Multiple head

• Cascading
  — Rain shower, downpour

• Shower panel / shower tower

• Body spas
  — Recirculating
    — Non-recirculating

• Rain systems

• Water Tile
Single Head
Multiple head
Cascade / Downpour

Becoming more popular > 15% of the market
Shower panel or shower tower
Body Spa
Body Spa with recirculation
Rain System
Water Tile
Trends

• Cascade systems becoming more popular - 15% of market

• Tankless water heaters make high flow systems possible without running out of hot water

• Hotel chains test showerheads to provide customers with shower satisfaction
• If more than one showerhead per shut off valve and flow is greater than 2.5 gpm at 80 psig – does this violate the building code?

• Clarify the law. Is it permissible to have multiple showerheads on one valve if the total flow is greater than 2.5 gpm?

• Is a body spa a shower?
  — If not – should it be regulated
  — What if it recirculates, can the showerhead then have a higher flow rate?
  Will those systems with large flows need extra large capacity water heaters, instantaneous water heaters?

• Are these Title 20 or Title 24 issues?
Questions

• How many showerheads are not in compliance?

• Is testing needed?

• Is better enforcement needed?

• How much water and energy could be saved?

• Are recent trends a problem?
  — If yes, what should be done about it?
Report ranking potential savings

<table>
<thead>
<tr>
<th>Rank</th>
<th>Scenario</th>
<th>Percent Water Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Counteract trend toward multiple showerheads, etc.</td>
<td>25%</td>
</tr>
<tr>
<td>2</td>
<td>Reduce average showering time by 1 minute</td>
<td>17%</td>
</tr>
<tr>
<td>3</td>
<td>Change all the showerheads that meet code to below code</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>Change all showerheads that exceed code to meet code</td>
<td>7%</td>
</tr>
<tr>
<td>5</td>
<td>Reduce number of showerheads tampered with</td>
<td>1%</td>
</tr>
<tr>
<td>6</td>
<td>Reduce tub spout leakage</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Details in report: Potential Water and Energy Savings from Showerheads, Peter Biermayer
Tampering & Non-compliance

• Some web sites and product instruction sheets tell you how to remove the flow restrictor to increase the flow.

• Some web sites advertise flow greater than 2.5 gpm.

Live in a low water pressure area or a high-rise building?
Not happy with your current water-saving shower head?
All our shower heads feature removable flow restrictors to maximize power and pressure.
Some ideas for potential research

• Performance & Efficiency Testing
  — Rate performance of showerheads by objective repeatable testing (coverage, temperature, force)
  — Allows choice of water saving showerheads without sacrificing shower experience

• Safety Testing
  — Low flow showerheads and sudden temperature changes due to change in water pressure
  — Temporary shutoff valves

• Evaluation of Human Factors Affecting Energy & Water Use
  — Relationship between temperature and water flow

See Proposal for Showerhead Testing and Evaluation for details
Showerhead performance metric

- Metric can include:
  - Temperature
  - Pressure
  - Spray pattern

- Metric should be researched – requires testing

- Additional testing for
  - Flow rate compliance
  - Safety
  - Tub spouts
  - Basic data from field testing
  - Test different types of showerheads
Linkages between Research, Conservation Programs and Results

Performance & Flow Testing
Tub Spout Leakage
Human Factors Research
Safety Testing

Market Transformation Programs
(may include financial incentives, special promotions, education, and voluntary and mandatory standards)

RESULT

Don't promote products unacceptable to the consumer (may result in tampering or replacement)
Reduce desire for multiple showerheads
Save Water & Energy
Utility Customers are Happy
For More Information

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• Report: Potential Water and Energy Savings from Showerheads
Thank You!