

Slide 1


Advanced Track: Cooling Tower
Cleaning 102 and Flat Plates




"BEFORE YOU JUMP IN"

Copyright © 2015 NADCA. All Rights Reserved.
No part of this publication may be reproduced or distributed by any means, electronic or mechanical, including photocopying, recording,
or any other information storage and retrieval system, without prior written consent from the publisher.

Slide 2




Presenter



Kevin Ulkrie, ASCS, CVI

Slide 3



Disclaimer

This presentation is not intended to be a comprehensive program covering all aspects of this topic. All technicians are encouraged to read and follow all applicable standards, codes and regulations related to this topic.

- ✓ It is the responsibility of each individual contractor to follow local building codes and licensing requirements and to work safely in accordance with OSHA guidelines.
- ✓ It is the contractor's responsibility to take proper precautions on each project to prevent cross contamination. Always take the health and safety of the building occupants into consideration before you conduct any cleaning procedures.
- ✓ All of the following tips are only general tips. They do not cover every situation and it is your responsibility to adapt these tips to the individual system you are working on.
- ✓ The Instructor is not responsible in any way for the work you perform after viewing this slide show. You are responsible for your own work.
- ✓ The views and opinions following are the instructors opinions and not necessarily the official position of the National Air Duct Cleaners Association.

Slide 4

 **SAFETY**


- Personal Safety
- Public Safety

The safety and responsibilities can not be stressed enough when microbial infection is involved.

Legionella is real.




Slide 5

 **SAFETY**

Cooling Tower Cleaning 102

- Personal Safety. Gloves and waterproof coveralls are used to protect your skin from biocides in the circulating water.
- Recommendations for cleaning- Wear gloves, waterproof shoes (rubber boots) and waterproof coveralls (Tyvek suits), and a half face respirator with P2 grade twin filter.

Slide 6

 **SAFETY**

Cooling Tower Cleaning 102

Cooling Tower Cleaning

- ❖ The most effective way of avoiding all the problems encountered with a cooling tower is a regular and thorough manual washout every six months.
- ❖ During the cleaning process the public must be kept out of the operational area, and sprays must be confined to the operational area.

Slide 7

TECHNICAL
NADCA
CONFERENCE

Cleaning a Cooling Tower

Equipment

- Safety Clothing (PPE) as required
- Cooling Tower
- Operation Manual
- Cleaning Equipment

Slide 8

TECHNICAL
NADCA
CONFERENCE

Equipment Needed

- Water hose
- 3000 psi pressure washer
- Pressure hose
- Dual lance wand with soap nozzle
- Fire hose if they have a 2-inch water line
- Flat shovels
- Big push brooms
- Lots of trash bags (3 mil)
- Ladders or scaffolding
- Common sense


Slide 9

TECHNICAL
NADCA
CONFERENCE

Common Procedure

```
graph TD; A[Complete a Risk Assessment for the task.] --> B[Wear all required PPE.]; B --> C[Follow operation manual and shut down the tower.]; C --> D[Disconnect power.]; D --> E[High pressure clean all internal components as instructed.]; E --> F[Reassemble tower.]; F --> G[Fill tower with water to the required depth.]; G --> H[Follow operations manual and start tower.]; H --> I[Check operation.];
```


Slide 10



Preventative Maintenance

- Expensive breakdowns, Legionella, inefficiencies, and increased running costs can mostly be attributed to poor maintenance.
- It is imperative that service personnel, owners, and users of cooling towers are committed to ongoing preventative maintenance.

Slide 11



Cooling Tower Cleaning 102

- Preventative maintenance should provide the owner/user with the following:
 - Early detection of problems that may lead to a breakdown.
 - Maintain the system's efficiency.
 - Determine that the system is complete and operating correctly.
 - Remove the need to do corrective repairs.
 - Maintain bacteria at safe levels.

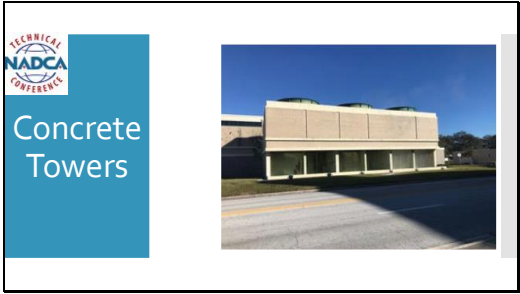
Slide 12



Slide 13




Slide 14



Slide 15




Slide 16

Slide 17




Slide 18

Slide 19

TECHNICAL
NADCA
CONFERENCE

Are You Any
Good at
Problem
Solving?

Slide 20

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning 102

Slide 21

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning 102

Slide 22

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning 102

Slide 23

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning 102

© 2019 at 11:45:51
101 Elmore Roberts Dr.
May Lake, PA 152
Troy, PA 151
West Chisbury, VA

Slide 24

TECHNICAL
NADCA
CONFERENCE

Fill Pack

· YOU MUST FIND A DELICATE BALANCE BETWEEN REMOVING SCALE AND NOT DAMAGING THE FILL.

Slide 25



Slide 26



Slide 27



Slide 28



Slide 29



Slide 30



Slide 31

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning

Slide 32

TECHNICAL
NADCA
CONFERENCE

Cooling Tower
Cleaning

Slide 33

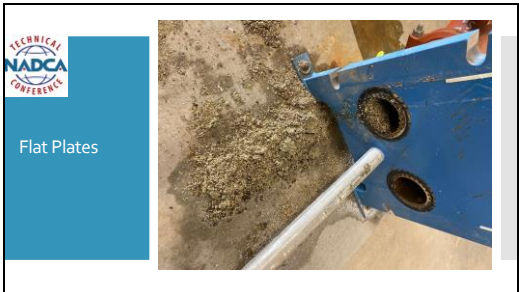
TECHNICAL
NADCA
CONFERENCE

Flat Plates

Slide 34



Slide 35



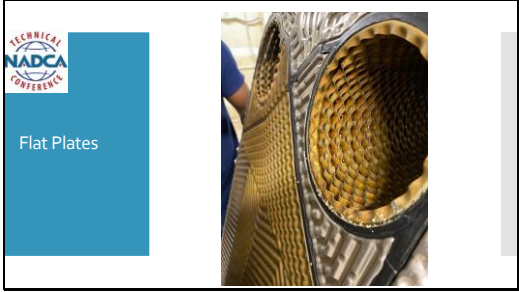
Slide 36



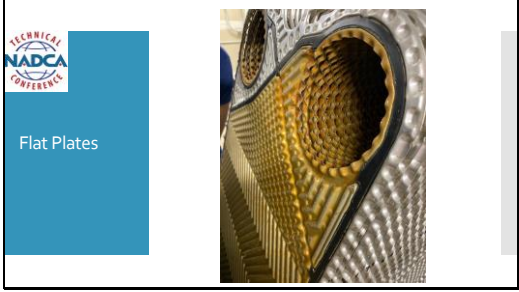
Slide 37



Slide 38



Slide 39



Slide 40



Slide 41



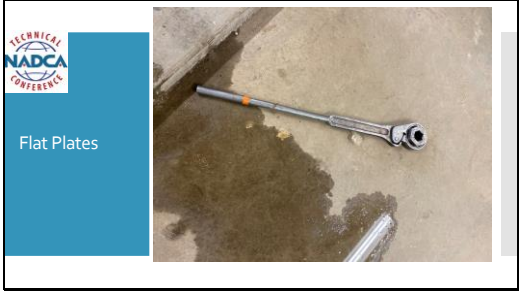
Slide 42



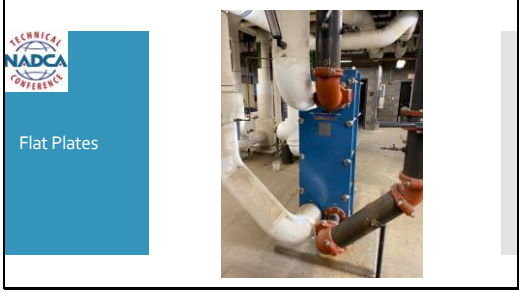
Slide 43



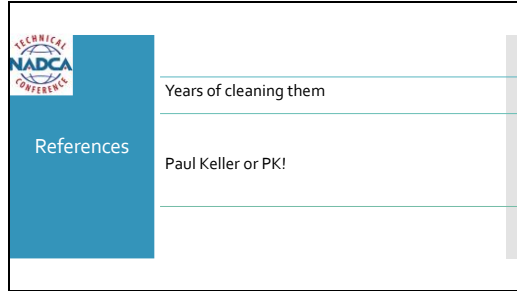
Slide 44



Slide 45



Slide 46



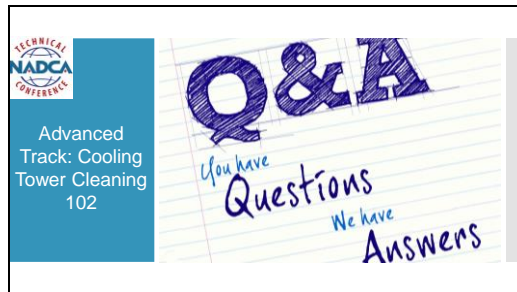
TECHNICAL
NADCA
CONFERENCE

References

Years of cleaning them

Paul Keller or PK!

Slide 47




TECHNICAL
NADCA
CONFERENCE

Advanced
Track: Cooling
Tower Cleaning
102

Q&A

You have
Questions
We have
Answers

Slide 48



TECHNICAL
NADCA
CONFERENCE

Advanced
Track: Cooling
Tower Cleaning
102

Presenter Contact Information

- Kevin Uilkie
- Kevin@kmfacserv.com
- (623) 930-5490

Slide 49

Thank you
for
Participating!

