



Do things the EEN way and we promise you will have a well run facility for a long time

## EEN O&M METHODOLOGY & TRAINING

[www.energyexpertsnow.com](http://www.energyexpertsnow.com)

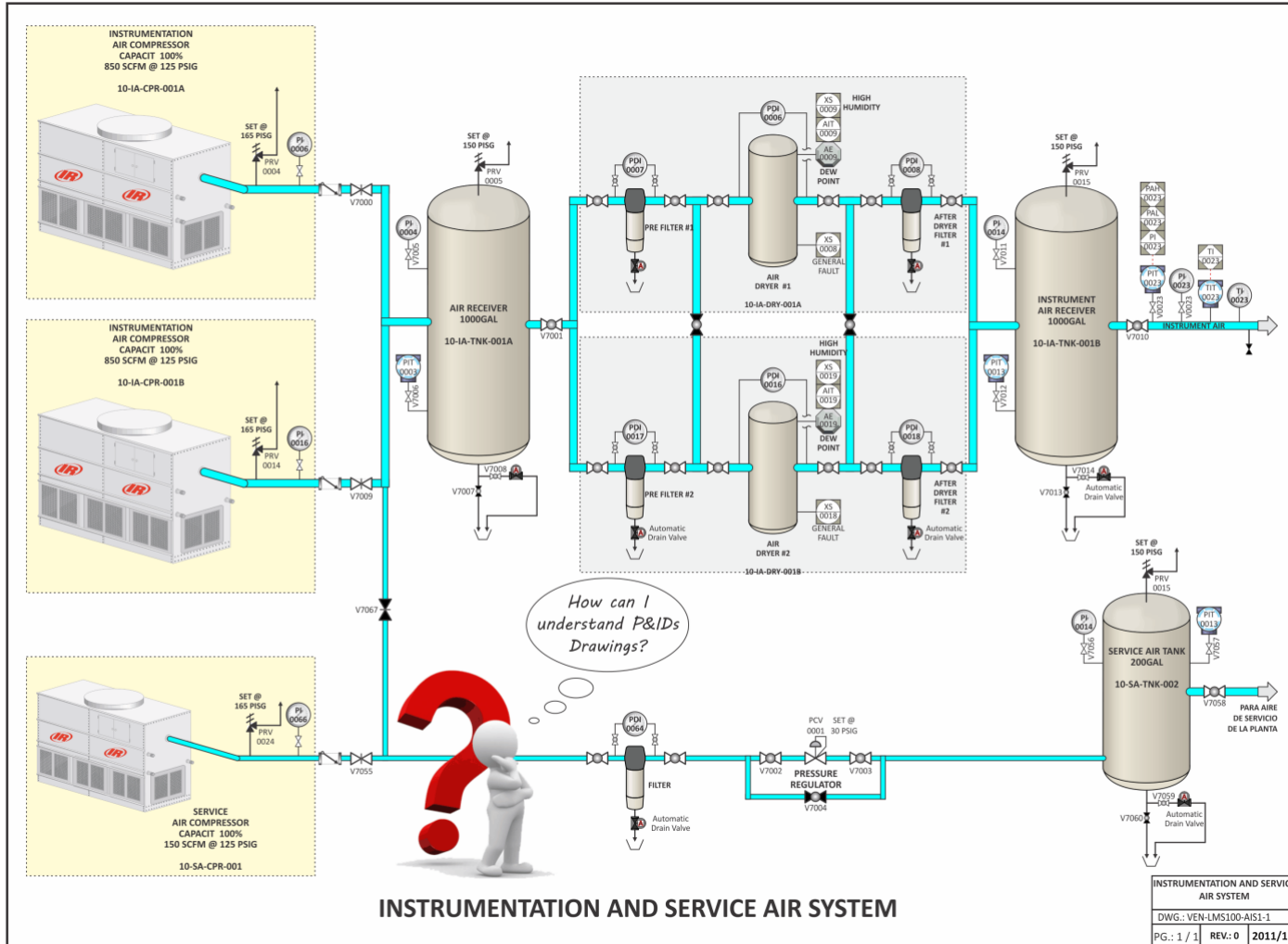
**“What the mind can conceive and believe the mind can achieve”**  
Napoleon Hill

# Training, the Key to Risk Reduction



Is your operator having difficulty to understand how things work? Our training has proven to speed up the learning process...no one can remember everything. We test and evaluate each plant person. We make difficult things simple by using lots of our own graphics and short & simple but detailed explanations.

# Simplification of systems



Are your P&IDs drawings a problem? Hard to read and understand? We use color and modern symbols to enhance the comprehension.

# O&M is a Long Term Issue

- Training - is an investment - not a cost
  - Increases plant reliability and availability
  - Reduces operations errors. (risk)
  - Reduces maintenance cost
  - Reduces costs by gradually replacing expats with local employees
- Implementing CMMS – Most critical Maintenance issue
  - Well implemented great ! Poorly done = problems.
  - Maintenance Program according to OEM procedures.
  - Reduce your maintenance time
  - Maintain Proper Maintenance & Manpower statistics
  - Control Maintenance costs

## O&M Mobilization - Pre commissioning

- Create and implement O&M procedures
  - Increases plant reliability and availability.
  - Standardizes plant to International standards.
  - Reduces equipment failures & operational error.
  - Limits chances for mistakes to happen.
  - Operate the plant based on goals and objectives.
- Create and implement EHS procedures
  - Reduce lost time injuries.
  - Reduce company liability.
  - Keep personnel motivated.
  - Safeguard critical equipment.
  - Keep your people safe - free from injuries.

## O&M Mobilization - Pre commissioning

- EEN Basic Knowledge Skills for Power Plants
  - Increases plant reliability and availability.
  - Ensures the technical staff understand the basics
  - Limits chances for mistakes to happen.
  - Objectively evaluates the staffs progress
- Implement EEN Systems Expert Program @
  - Ensures each person is expert in each system
  - Reduces company liability.
  - Keeps personnel motivated.
  - Train the Trainer – Owners personnel can do it.
  - Each one teach one = teamwork.

## O&M Mobilization - Pre commissioning

- Develop an Annual Operations Plan
- Develop an Annual Budget
- Develop a long term maintenance plan
- Develop all Administrative policies and procedures
- Understand and implement the logistics for start up
- Order all tools and consumables
- Organize the warehouse and stock
- Develop predictive maintenance plan
- Develop Infra-red monitoring program
- Implement vibration analysis program
- Develop Annual self audit plan
- Implement CMMS system
- Conduct all required training



# EEN Strong Points

## Management support

- Management regularly visit the plants
- Detailed knowledge of the plant limitations
- Frequent meetings & reports

## Committed staff

- Remarkable effort to fix the problems
- Always available
- Employees encouraged and willing

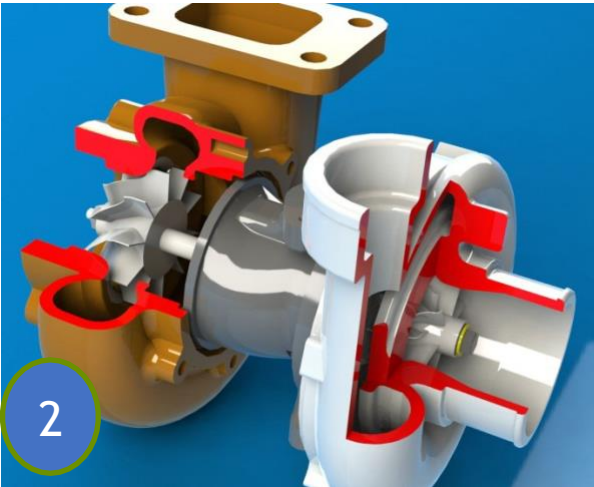
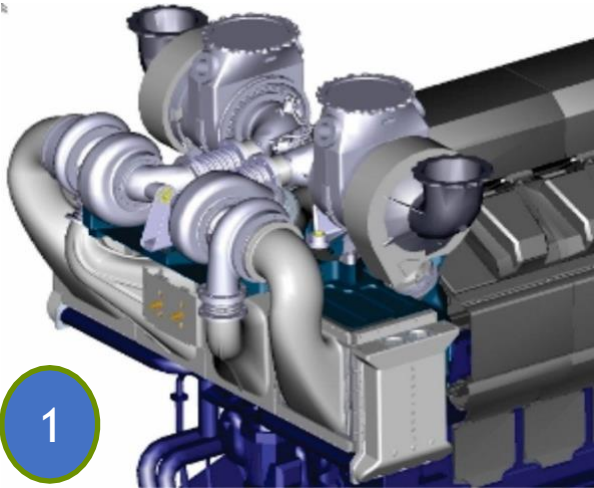
## Good housekeeping

- Plants clean
- Very well organized
- Tidy
- Attention to details

## Tools & Safety

- Specialized tools.
- Individual tool boxes
- Constant safety training

# EEN Staff Managed Plants - Training Aids



Training Drawings Developed by EEN



18V46 Wartsila Diesel power barge plant operate by EEN personnel



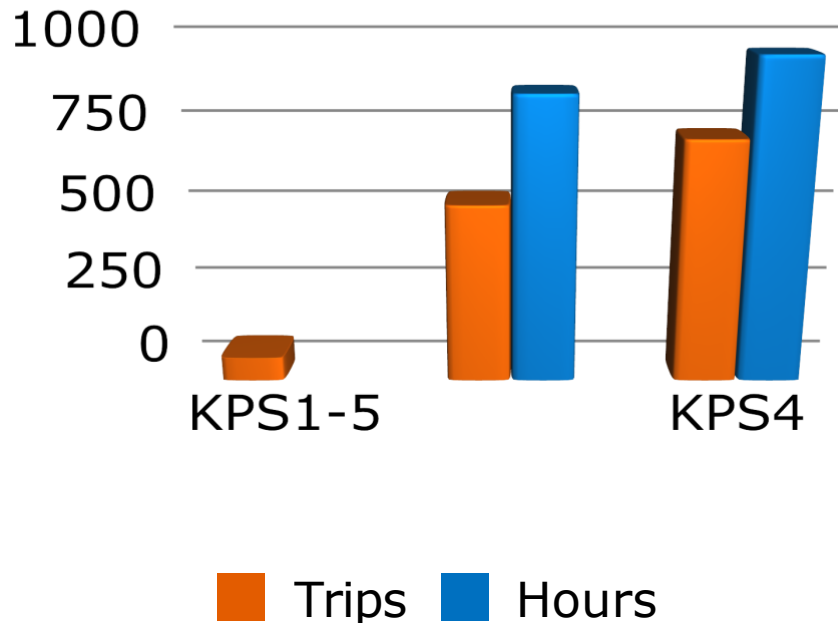
PP operate by EEN personnel MAN



Cleanliness is imperative

# We Track Plant reliability

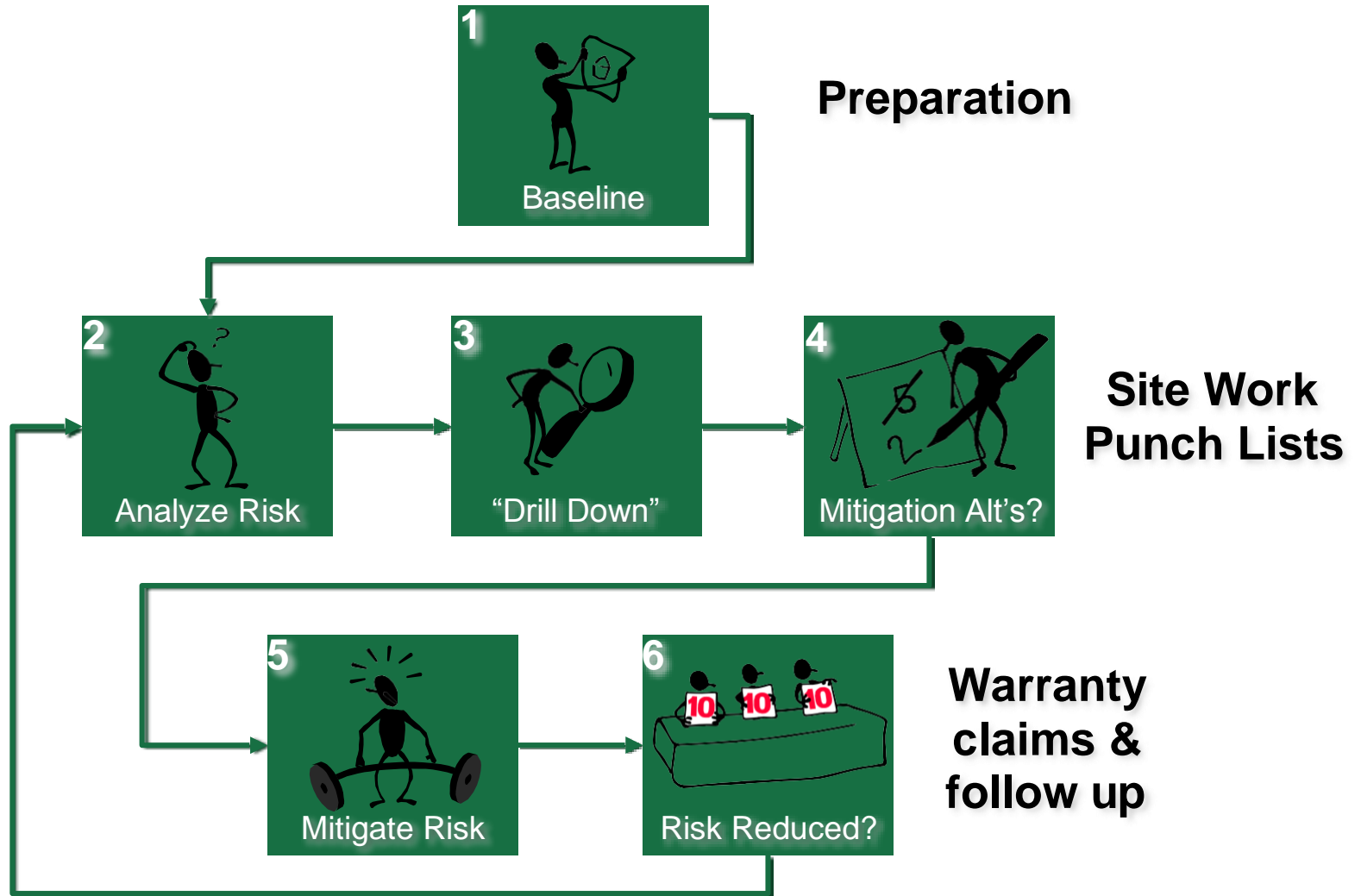
## Facility engine trips



Engine trips far too high One engine trip per month is too much Immediate action needed

- Plant 1 Hours lost 846
- Plant 2 Hours lost 956
- Projection at the end of the year 10,788 hrs
- Assuming a profit of 0,01USD by Kwh the amount of money losing would be over
- **\$ 1.0 M USD**
  
- With a derating has a de-rating of 20%, Assuming a profit of 0,01USD by Kwh the amount of money lost is **\$ 5.0 M USD**

# O&M EPC oversight–Punch List & O&M Risks



# Operational Risk Methodology

## O&M Risks/Hazards

The unique combination of an:



Defined As:

O&M Practices of the Company	Any Element Of An Operation's Activities, Which Can Interact With The equipment Or Human Health ( <i>Cause</i> )	Any Change to the Equipment or Human Health Wholly or Partially Resulting From the Company's Activities ( <i>Effect</i> )
HFO with high sulphur vanadium/sodium	Hot Section corrosion	High turbine de-rating frequent outages

### Process Overview

- ✓ Institute a Systematic Risk Evaluation Process
- ✓ Develop a Report w/ Prioritized List of O&M Risks/Fixes
- ✓ Develop tracking table To support the process going forward

## EEN Self Audits Plants by Category

Items	Plant 1	Plant 2	Plant 3	Average Score
Health, Safety and Environmental				
Operations Policy & Best Practices				
Operations Reports				
Operations Procedures				
Operations Training & Qualification				
Maintenance Policy				
Maintenance Planning & Scheduling				
Predictive Maintenance				
Computerized Maintenance Management System				
<b>Final Score - goal over 85 %</b>				

We audit ourselves every 12 months to ensure top ongoing performance for our clients

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Thank you for your time  
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