



# EQUIPMENT MANAGEMENT

**EXTENDED EQUIPMENT LIFE**

## Tango™ Equipment Lifecycle Management



### Benefits

- Tango Equipment Management Provides Focus on Reliability Improvement.
- Tango identifies unreliable equipment and locations. Tango also provides a detailed record of both equipment and location history.
- Calculate critical reliability information:
  - Cause of failure
  - Cost of failure
  - MTBF (Mean Time Between Failure)
- Utilizes equipment overhaul shops to input failure and repair information.
- Search capability allows you to find a similar group of equipment or very specific equipment, depending upon the extent of the search parameters.
- Utilizes equipment overhaul shops to input failure and repair information.
- Provides management of out for repair equipment.
- Provides design data for each equipment type.
- Allows the attachment of supplemental documents, drawings, and photographs for designs, equipment locations.

# EQUIPMENT HISTORY



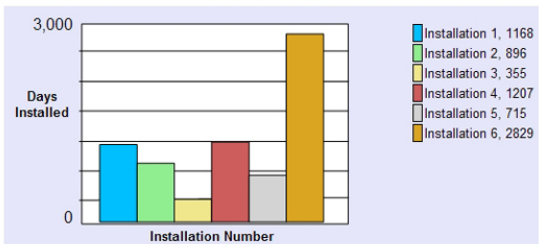
## Equipment History

Equipment Class Motors  
 Equipment Type Motor - AC Induction  
 Report Date 10/12/2010

### Equipment Definition

Plant Tag	Serial Number	Motor Mfg	Frame Size	Model Number	Power	Speed	Voltage - Stator
1450	5282414002	Louis Allis	509UPD	????	350 HP	1200 RPM	460 V

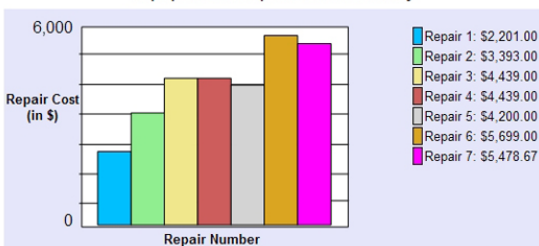
Days Installed vs (Equipment) Installation Number



### Equipment Transfer History Listing

Start	End	Days	Type	Condition Entries	In Place Maintenance	Remarks
02/01/1983	02/08/1983	7	Repair 1			
03/01/1983	05/12/1986	1167	Install 1	0	0	Removal: ROUTINE CHANGE
05/12/1986	05/15/1986	3	Repair 2			Send: RECONDITION * BRGS * NEW OIL SEALS * LEAD WORK
05/16/1986	10/28/1988	896	Install 2	0	0	Removal: LOWER BEARING FAILURE - NDT
11/01/1988	11/11/1988	10	Repair 3			Send: RECONDITION
01/13/1989	01/03/1990	355	Install 3	0	0	Removal: ICE PROBLEMS ON TOWER - WINDING GROUNDED
01/05/1990	01/19/1990	14	Repair 4			Send: REWIND
01/23/1990	05/14/1993	1206	Install 4	0	0	Removal: BEARINGS
05/19/1993	05/28/1993	9	Repair 5			Send: RECONDITION
06/07/1993	05/23/1995	715	Install 5	0	0	Removal: BEARING PROBLEMS
05/24/1995	05/30/1995	6	Repair 6			Send: REPAIR UPPER HUB AND SHAFT
06/01/1995	02/28/2003	2829	Install 6	2	0	
02/13/2007	06/25/2007	131	Repair 7			Send: provide scope of work & quote after teardown & inspection Receive: Look into lube practice & training; also recommend checking location for source on DE

Equipment Repair Cost History



EQUIPMENT INFO

EQUIPMENT ASSET INFORMATION

CLICK TO VIEW DESIGN ATTACHMENTS

TIME TO FAILURE (MTBF)

REPAIR STATUS & HISTORY

REPAIR DETAILS & REPORTS

REPAIR COST HISTORY

**Tango tracks specific pieces of equipment and can present each component's design information and lifecycle history in a standard format "Equipment History Report". When a critical and expensive component is degraded it must be repaired or replace. The following factors need to be considered in defining if a repair is to be performed and the type and extent of the repair:**

- How many times has it been repaired?
- Is the installed life shorter than expected?
- Is there a history of a repetitive root cause of failure?
- What does a typical repair cost?
- Can the plant expect a reliable cycle if repaired?



# Location History Report

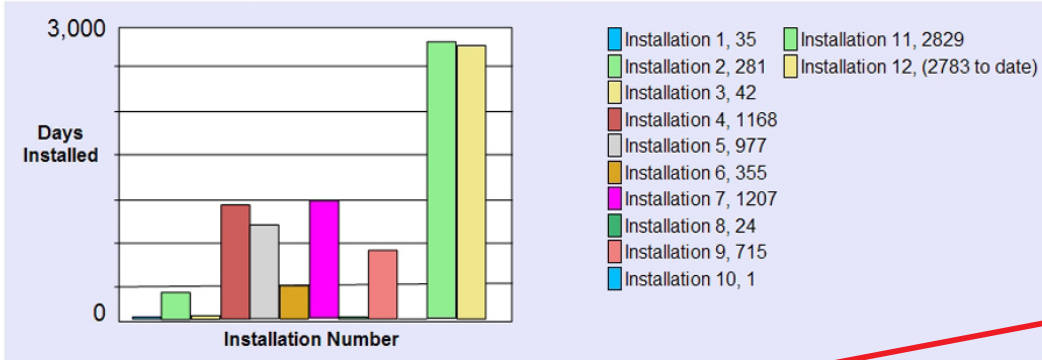
Report Date: 10/12/2010



# LOCATION HISTORY

<b>Unit</b>	801 Cooling Tower
<b>Function</b>	Tower
<b>Asset</b>	CLDWELL
<b>Asset Comp</b>	MOTOR1

Days Installed vs (Location) Installation Number



**CLICK TO UNFOLD EQUIPMENT DESIGN INFORMATION**

Plant Tag Serial Number	Start Date	End Date	Days Installed	Remarks
1449 5282414001	03/08/1982	04/12/1982	34	
3501 3259815M001	04/12/1982	01/18/1983	281	
1758 840504	01/18/1983	03/01/1983	42	
1450 5282414002	03/01/1983	05/12/1986	1167	Remove: ROUTINE CHANGE
3004 5282414006	05/12/1986	01/13/1989	977	
1450 5282414002	01/13/1989	01/03/1990	355	Remove: ICE PROBLEMS ON TOWER - WINDING GROUNDED
1450 5282414002	01/23/1990	05/14/1993	1206	Remove: BEARINGS
55 1-5117-64930-1-1	05/14/1993	06/07/1993	24	Remove: BEARING PROBLEM - 600 AMPS WHEN LOADED
1450 5282414002	06/07/1993	05/23/1995	715	Remove: BEARING PROBLEMS
55 1-5117-64930-1-1	05/31/1995	06/01/1995	1	Remove: WOULD NOT COME UP TO SPEED
1450 5282414002	06/01/1995	02/28/2003	2829	
1452 5282414005	02/28/2003		(2783)	

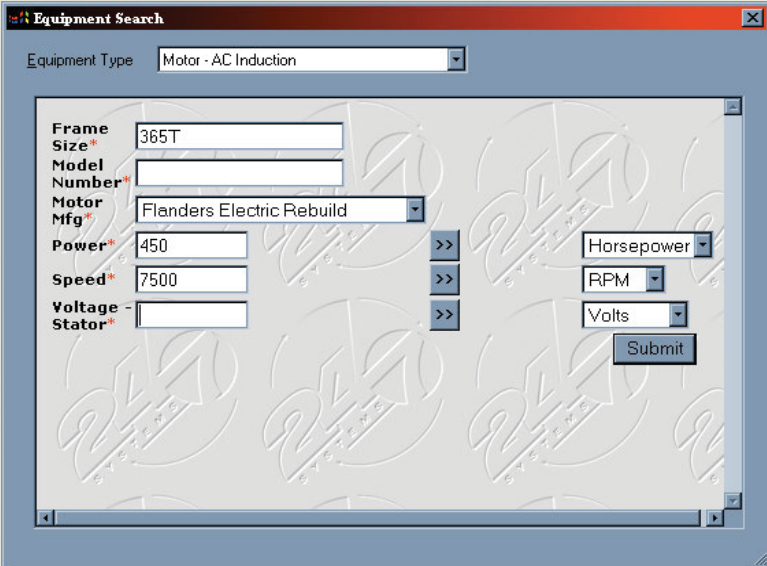
**Tango tracks functional equipment locations and provides a standard format "Location History Report". This report details what equipment has been installed at the location, its installed life and reason(s) for failure. The Location History Report provides the plant Reliability Engineer the answers to several important reliability questions.**

- Does this location provide the life that is expected (Mean Time Between Failures)?
- Is there any reoccurring root cause of failure?
- Will a change in equipment design eliminate the common root cause of failure?



## Linked Documents

Attachments are typically items such as photographs, drawings, manuals, reports, data tables, etc. Tango allows attachments to be linked to designs, specific equipment, locations, repairs, and condition entries.

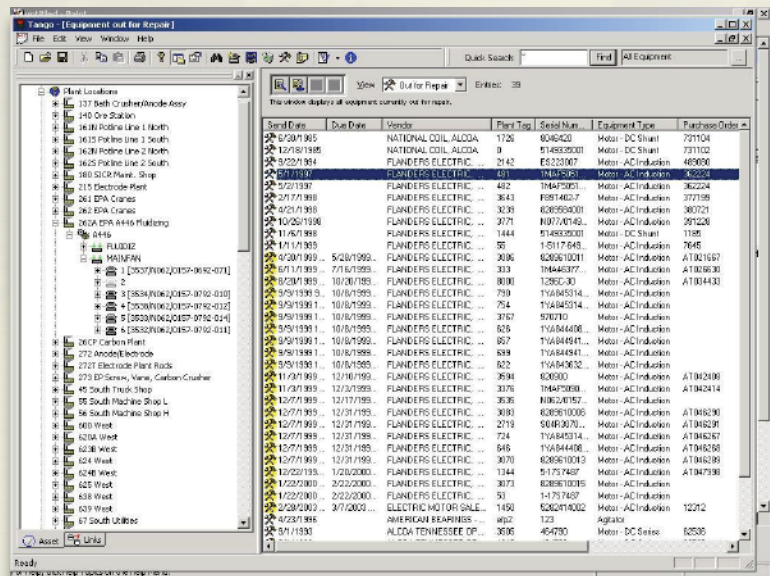


## Search

With Tango, users may search the entire plant inventory for any machine in the database. In the example below, a search is being conducted for an AC Motor with a 365T frame size. The search will return every AC motor in the database that has 365T and related frames. Users may further narrow their search by entering additional search criteria such as manufacturer names, model number designations, horsepower, RPM, and voltage. If you are searching for a specific machine, you may enter the plant tag and/or serial numbers of the machine you seek.

## Out For Repairs Management

The out-for-repair list gives you a complete list of the machines that have been sent to repair shops, their status, and when they are expected back from repair. This provides users with the ability to plan ahead and schedule maintenance installations.



A COMPONENT OF:



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