



**TELEDYNE**  
**TEST SERVICES**

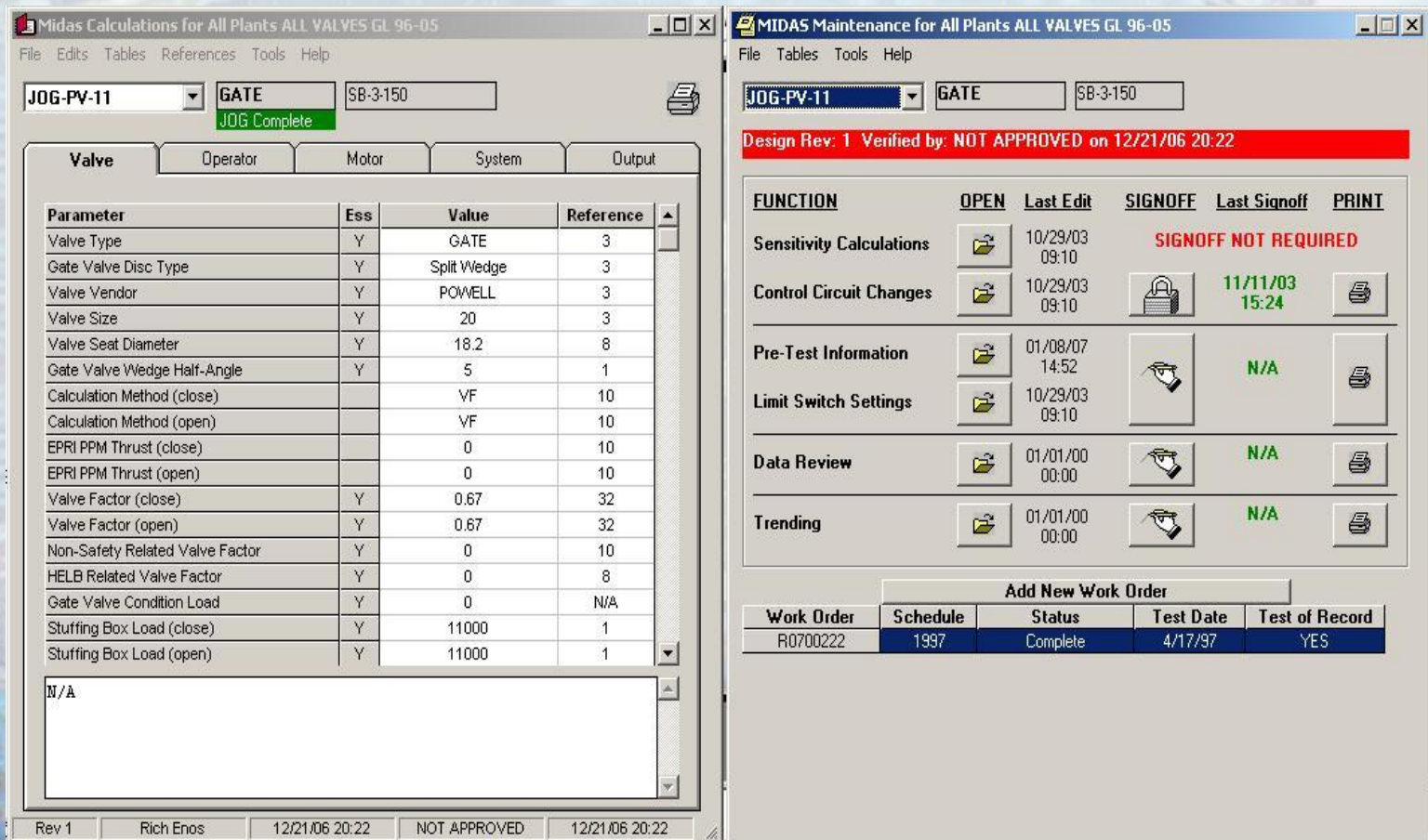
A Teledyne Technologies Company

**MOV Software**

**MIDAS Update**  
**QUIKLOOK Users' Group**  
**6<sup>th</sup> Annual Meeting**

**August 15-16, 2012**  
**Tabor Academy**  
**Marion, Massachusetts**

## Integrated Design Calculation and Test Analysis Software



The screenshot displays two windows from the MOV Software interface. The left window, titled "Midas Calculations for All Plants ALL VALVES GL 96-05", shows a table of parameters for valve JOG-PV-11. The right window, titled "MIDAS Maintenance for All Plants ALL VALVES GL 96-05", shows a summary of functions and a work order table.

**Valve Parameters Table:**

Parameter	Ess	Value	Reference
Valve Type	Y	GATE	3
Gate Valve Disc Type	Y	Split Wedge	3
Valve Vendor	Y	POWELL	3
Valve Size	Y	20	3
Valve Seat Diameter	Y	18.2	8
Gate Valve Wedge Half-Angle	Y	5	1
Calculation Method (close)		VF	10
Calculation Method (open)		VF	10
EPRI PPM Thrust (close)		0	10
EPRI PPM Thrust (open)		0	10
Valve Factor (close)	Y	0.67	32
Valve Factor (open)	Y	0.67	32
Non-Safety Related Valve Factor	Y	0	10
HELB Related Valve Factor	Y	0	8
Gate Valve Condition Load	Y	0	N/A
Stuffing Box Load (close)	Y	11000	1
Stuffing Box Load (open)	Y	11000	1

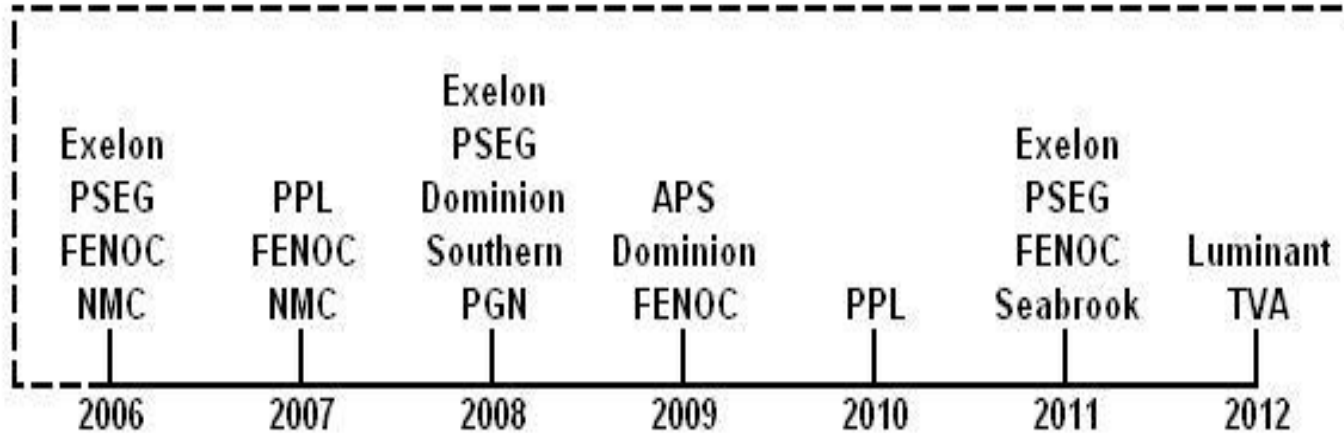
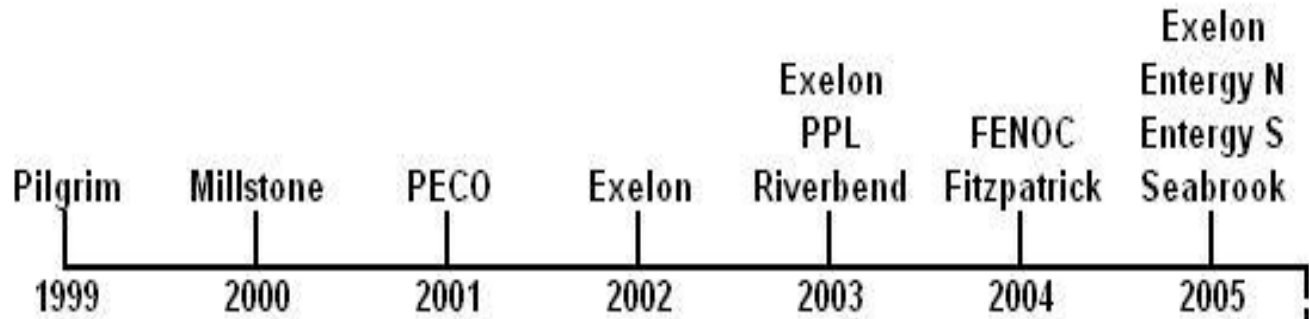
**Maintenance Functions Summary:**

FUNCTION	OPEN	Last Edit	SIGNOFF	Last Signoff	PRINT
Sensitivity Calculations	[Icon]	10/29/03 09:10	SIGNOFF NOT REQUIRED		
Control Circuit Changes	[Icon]	10/29/03 09:10	[Icon]	11/11/03 15:24	[Icon]
Pre-Test Information	[Icon]	01/08/07 14:52	[Icon]	N/A	[Icon]
Limit Switch Settings	[Icon]	10/29/03 09:10	[Icon]	N/A	[Icon]
Data Review	[Icon]	01/01/00 00:00	[Icon]	N/A	[Icon]
Trending	[Icon]	01/01/00 00:00	[Icon]	N/A	[Icon]

**Work Order Table:**

Work Order	Schedule	Status	Test Date	Test of Record
R0700222	1997	Complete	4/17/97	YES

Rev 1 | Rich Enos | 12/21/06 20:22 | NOT APPROVED | 12/21/06 20:22



- **Refinements to existing Methodologies.**
- **SQL Server compatibility refinements.**
- **Added method Copy To or From Mod Record**
- **Added method Compare to Mod Record**
- **Added method Compare to Other Valve**
- **Added tool Calculation List**
- **Revised Export To Excel User Interface**
- **Revised Build SQL User Interface**
- **Revised Select Reference User Interface**
- **Updated several customers to latest software specifications**
- **Teledyne Citrix Server**



- **Enhanced Main User Interface to Notify for Unsat Post-Test Evaluations**
- **Enhanced Add Workorder function to allow user control of previous test**
- **Enhanced Pre-Test function to allow user control of previous test**
- **Relocate Grease History Functionality**
- **Added tool Trend View**
- **Added tool Software Verification**
- **Updated several customers to latest software specification**
- **Teledyne Citrix Server**



**Midas Calculations for All Plants ALL VALVES**

File Edits Tables References Tools Help

Check   **NEW TEST OPEN ISSUES**

Compare **JOG Incomplete**

Copy  Operator Motor System Output

Print  As-Built

Filters  New Valve

Exit  Mod Record

	Ess	Value	Reference
Valve Size	Y	6	171
Valve Seat Diameter	Y	5.688	8
Gate Valve Wedge Half-Angle	Y	5	1
Calculation Method (close)		VF	10
Calculation Method (open)		VF	10
EPRI PPM Thrust (close)		0	10
EPRI PPM Thrust (open)		0	10
Valve Factor (close)	Y	0.67	56
Valve Factor (open)	Y	0.67	56
Non-Safety Related Valve Factor	Y	0.56	171
HELB Related Valve Factor	Y	0.58	N/A
Gate Valve Condition Load	Y	0	N/A
Stuffing Box Load (close)	Y	1250	1
Stuffing Box Load (open)	Y	1250	1

N/A

Rev 0 | Rich Enos | 2/11/05 17:26 | TELEDYNE | 2/11/05 17:26



**Midas Calculations for All Plants ALL VALVES**

File Edits Tables References Tools Help

MO-2-12-015 **GATE** SMB-0-25 **NEW TEST OPEN ISSUES**

**JOG Incomplete**

**Valve** Operator Motor System Output

Parameter	Ess	Value	Reference
Valve Type	Y	GATE	171
Gate Valve Disc Type	Y	Flexible Wedge	171
Gate Valve Condition Load	Y	0	N/A
Stuffing Box Load (close)	Y	1250	1
Stuffing Box Load (open)	Y	1250	1

**Add Mod Record for MO-2-12-015**

This feature adds a new valve by copying the current valve record to a new valve record. Enter the new valve and plant/unit below.

Valve ID:

Plant/Unit:

OK Cancel

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26



# Compare To Mod Record

Midas Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

Check  SMB-0-25 **NEW TEST OPEN ISSUES**

Compare  Motor System Output

Copy To Historical

Print **To Mod Record**

Filters To Other Valve

Exit

	Ess	Value	Reference
	Y	GATE	171
	Y	Flexible Wedge	171
	Y	WALWORTH	171
Valve Size	Y	6	171
Valve Seat Diameter	Y	5.688	8
Gate Valve Wedge Half-Angle	Y	5	1
Calculation Method (close)		VF	10
Calculation Method (open)		VF	10
EPRI PPM Thrust (close)		0	10
EPRI PPM Thrust (open)		0	10
Valve Factor (close)	Y	0.67	56
Valve Factor (open)	Y	0.67	56
Non-Safety Related Valve Factor	Y	0.56	171
HELB Related Valve Factor	Y	0.58	N/A
Gate Valve Condition Load	Y	0	N/A
Stuffing Box Load (close)	Y	1250	1
Stuffing Box Load (open)	Y	1250	1

N/A

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26





# Compare To Mod Record

Midas Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

MO-2-12-015 GATE SMB-0-25 **NEW TEST OPEN ISSUES**

JOG Incomplete

Valve Operator Motor System Output

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Compare MO-2-12-015 To MO-2-12-015-M

Print Exit

Input Output References

Parameter	Location	Other Valve	New Value	%Change
Valve Seat Diameter	Valve	5.788	5.688	-1.7

Other Valve TELEDYNE 1/5/11 01:00 NOT APPROVED 1/5/11 01:00

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26



# Compare To Mod Record

Midas Calculations for All Plants ALL VALVES

MO-2-12-015 GATE SMB-0-25

**JOG Incomplete** **NEW TEST OPEN ISSUES**

Valve Operator Motor System Output

---

Compare MO-2-12-015 To MO-2-12-015-M

Print Exit

Parameter	Direction	Other Valve	New Value	%Change
Drifice Area		26.31	25.41	-3.4
Thrust due to DP Effect (close)	close	18985	18336	-3.4
HELB Thrust due to DP Effect		16435	15873	-3.4
Min Design Thrust (close)	close	21546	20897	-3.0
HELB Related Min Required Thrust		18996	18434	-3.0
Required Thrust (close)	close	21546	20897	-3.0
Required Torque (close)	close	306.2	296.9	-3.0
NSR Min Required Thrust		18443	17900	-2.9
NSR Min Required Torque		262.1	254.4	-2.9
Min Design Thrust Criteria (close)		21546	20897	-3.0
Margin D1 Denominator		387.6	375.9	-3.0
Margin D3 Denominator		458.4	444.6	-3.0
Min Required Thrust @CST		30993	30059	-3.0
Min Required Torque @CST		478	464	-2.9

Other Valve: TELEDYNE | 1/5/11 01:00 | NOT APPROVED | 1/5/11 01:00

Rev 0 | Rich Enos | 2/11/05 17:26 | TELEDYNE | 2/11/05 17:26



**Midas Calculations for All Plants ALL VALVES**

File Edits Tables References Tools Help

Check ▶ M **GATE** SMB-0-25 **Check**

Compare ▶ **JOG Incomplete** **OPEN ISSUES**

Generator Motor System Output

Copy ▶ From ▶ As-Built

Print ▶ To ▶ Historical

Filters ▶ Disc Type **Mod Record**

Exit

	Ess	Value	Reference
	Y	GATE	171
	Y	Flexible Wedge	171
	Y	WALWORTH	171
Valve Size	Y	6	171
Valve Seat Diameter	Y	5.788	8
Gate Valve Wedge Half-Angle	Y	5	1
Calculation Method (close)		VF	10
Calculation Method (open)		VF	10
EPRI PPM Thrust (close)		0	10
EPRI PPM Thrust (open)		0	10
Valve Factor (close)	Y	0.67	56
Valve Factor (open)	Y	0.67	56
Non-Safety Related Valve Factor	Y	0.56	171
HELB Related Valve Factor	Y	0.58	N/A
Gate Valve Condition Load	Y	0	N/A
Stuffing Box Load (close)	Y	1250	1
Stuffing Box Load (open)	Y	1250	1

N/A

Rev 1 | TELEDYNE | 1/5/11 01:00 | NOT APPROVED | 1/5/11 01:00



Midas Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

MO-2-12-015-M GATE SMB-0-25 Check

JOG Incomplete

OPEN ISSUES

Valve	Operator	Motor	System	Output																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Parameter</th> <th style="width: 10%;">Ess</th> <th style="width: 20%;">Value</th> <th style="width: 20%;">Reference</th> </tr> </thead> <tbody> <tr> <td>Valve Type</td> <td>Y</td> <td>GATE</td> <td>171</td> </tr> <tr> <td colspan="4" style="background-color: #e0e0e0;"> <div style="border: 1px solid gray; padding: 5px;"> <p style="background-color: #4a7ebb; color: white; margin: 0; padding: 2px;">Copy FROM Mod Record for MO-2-12-015-M <span style="float: right; font-size: 0.8em;">✕</span></p> <div style="text-align: center; margin: 10px 0;"> </div> <p>Are you sure that you want to Copy From Mod Record for this valve?</p> <p>This process will do the following:</p> <ol style="list-style-type: none"> <li>1) COPY the Mod Record WIP contents to the original valve record*</li> <li>2) DELETE the MOD RECORD</li> </ol> <p>*NOTE: The As-Built contents of the original valve record will not be effected</p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <span style="border: 1px solid gray; padding: 5px 15px;">Yes</span> <span style="border: 1px solid gray; padding: 5px 15px;">No</span> </div> </div> </td> </tr> <tr> <td>Non-Safety Related Valve Factor</td> <td>Y</td> <td>0.56</td> <td>171</td> </tr> <tr> <td>HELB Related Valve Factor</td> <td>Y</td> <td>0.58</td> <td>N/A</td> </tr> <tr> <td>Gate Valve Condition Load</td> <td>Y</td> <td>0</td> <td>N/A</td> </tr> <tr> <td>Stuffing Box Load (close)</td> <td>Y</td> <td>1250</td> <td>1</td> </tr> <tr> <td>Stuffing Box Load (open)</td> <td>Y</td> <td>1250</td> <td>1</td> </tr> <tr> <td colspan="4" style="background-color: #e0e0e0; height: 40px;">N/A</td> </tr> </tbody> </table>					Parameter	Ess	Value	Reference	Valve Type	Y	GATE	171	<div style="border: 1px solid gray; padding: 5px;"> <p style="background-color: #4a7ebb; color: white; margin: 0; padding: 2px;">Copy FROM Mod Record for MO-2-12-015-M <span style="float: right; font-size: 0.8em;">✕</span></p> <div style="text-align: center; margin: 10px 0;"> </div> <p>Are you sure that you want to Copy From Mod Record for this valve?</p> <p>This process will do the following:</p> <ol style="list-style-type: none"> <li>1) COPY the Mod Record WIP contents to the original valve record*</li> <li>2) DELETE the MOD RECORD</li> </ol> <p>*NOTE: The As-Built contents of the original valve record will not be effected</p> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 10px;"> <span style="border: 1px solid gray; padding: 5px 15px;">Yes</span> <span style="border: 1px solid gray; padding: 5px 15px;">No</span> </div> </div>				Non-Safety Related Valve Factor	Y	0.56	171	HELB Related Valve Factor	Y	0.58	N/A	Gate Valve Condition Load	Y	0	N/A	Stuffing Box Load (close)	Y	1250	1	Stuffing Box Load (open)	Y	1250	1	N/A			
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N/A																																								

Rev 1 | TELEDYNE | 1/5/11 01:00 | NOT APPROVED | 1/5/11 01:00



# Compare To Other Valve

**Midas Calculations for All Plants ALL VALVES**

File Edits Tables References Tools Help

Check ▶ **GATE** SMB-0-25 **NEW TEST OPEN ISSUES**

Compare ▶ To As-Built **complete**

Copy ▶ To Historical

Print ▶ To Mod Record

Filters ▶ **To Other Valve**

Exit ▶

	Ess	Value	Reference
	Y	LIMITORQUE	171
	Y	SMB	171
	Y	0	171
Actuator Overall Gear Ratio	Y	69.56	59
Actuator Worm Gear Set	Y	37:1	1
Spring Pack	Y	0501-184	59
Spring Pack Curve Source	Y	GENERIC	N/A
Actuator Close Control Scheme	Y	TORQUE	633
Close TQ Switch Active Flag		N/A	633
Extended Close TQ Switch Bypass Flag		N/A	633
Extended Actuator Thrust Multiplier	Y	1.62	11
Extended Actuator Torque Multiplier	Y	1.1	1
Limitorque Application Factor	Y	0.9	1
ComED Efficiency Factor	Y	0.95	1
Actuator Order Number		224977-1	3
Actuator Serial Number		L474829	3
Actuator Installation Date		N/A	3

N/A

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26



# Compare To Other Valve

Midas Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

MO-2-12-015 GATE SMB-0-25 **NEW TEST OPEN ISSUES**

**Compare to Other Valve**

This feature compares the current valve record to any other valve record. The WIP tables are compared. Select the other valve below.

Valve ID	GL 96-05	Valve Type	Valve MFG	Operator Size	Gearbox Size
JOG-PV-33	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-34	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-35	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-36	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-37	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-38	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-39	NO	GLOBE	VELAN	SMB-000	N/A
JOG-PV-40	NO	GLOBE1	ROCKWELL	SMB-000	N/A
JOG-PV-41	NO	GLOBE	VELAN	SMB-000	N/A
MO-2-12-015-M	YES	GATE	WALWORTH	SMB-0	N/A
MO-3-12-068	YES	GLOBE	ANCHOR DARLING	SMB-0	N/A
MO-3-23-014	YES	GATE	WALWORTH	SMB-1	N/A
MPR-Bal-Globe-1	NO	GLOBE	VELTEK	SB-3	N/A
MPR-Bal-Globe-2	NO	GLOBE	COPESE-VULCAN	SMB-000	N/A
MPR-Butterfly-1	NO	BUTTERFLY2	CLOW	SMB-000	HOBC

OK Cancel

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26



# Compare To Other Valve

Midas Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

MO-2-12-015 GATE SMB-0-25 **NEW TEST OPEN ISSUES**

JOG Incomplete

Valve Operator Motor System Output

---

Compare MO-2-12-015 To MO-3-23-014

Print Exit

Parameter	Location	Other Valve	New Value	%Change
Valve Size	Valve	8	6	N/A
Valve Seat Diameter	Valve	6.938	5.688	-18.0
Valve Factor (close)	Valve	0.6	0.67	11.7
Valve Factor (open)	Valve	0.6	0.67	11.7
Non-Safety Related Valve Factor	Valve	0	0.56	Infinite
HELB Related Valve Factor	Valve	0	0.58	Infinite
Stuffing Box Load (close)	Valve	3000	1250	-58.3
Stuffing Box Load (open)	Valve	3000	1250	-58.3
Valve Limiting Thrust (close)	Valve	68338	43400	-36.5
Valve Limiting Thrust (open)	Valve	48696	31800	-34.7
Valve Limiting Part (close)	Valve	Stem	YOKE	N/A
Valve Limiting Part (open)	Valve	Stem	DISC	N/A
Maximum Seismic Thrust	Valve	73945	0	-100
Stem Diameter at Packing	Valve	1.5	1.25	16.7

Other Valve Rich Enos 2/28/08 16:37 TELEDYNE 2/28/08 16:37

Rev 0 Rich Enos 2/11/05 17:26 TELEDYNE 2/11/05 17:26



MIDAS Calculations for All Plants ALL VALVES

File Edits Tables References Tools Help

AF3869

Global Parameter Evaluator

Export to Excel

**Calculation List**

Verify Software

Valve Actua System Output

Parameter	Value	Reference
Valve Type	GATE	92

Calculation List

Sort Exit

Valve	Valve Type	96-05	Prepared By	Prepare Date	Reviewed By	Review Date
2CHS-LCV115B	GATE	True	David Thrall	01/12/06 08:48:15	Rich Enos	11/01/11 13:46:20
2CHS-MOV289	GATE	True	David Thrall	01/12/06 08:44:38	Rich Enos	11/01/11 13:46:48
2CHS-MOV289-M	GATE	True	David Thrall	01/12/06 08:44:38	Rich Enos	11/01/11 13:46:48
2RHS-MOV701B	GATE	True	David Thrall	07/13/09 18:59:45	Rich Enos	11/01/11 13:47:01
2SIS-MOV8809A	GATE	True	TELEDYNE	10/20/11 09:31:41	Rich Enos	11/01/11 13:47:20
2SIS-MOV8809-X	GATE	True	Rich Enos	11/03/11 13:18:29	NOT APPROVED	11/03/11 13:18:29
2SWS-MOV113C	GATE	False	David Thrall	01/06/06 08:09:03	NOT APPROVED	01/06/06 08:09:03
AF3869	GATE	True	Rich Enos	11/01/11 13:59:47	NOT APPROVED	11/01/11 13:59:47
AF3870	GATE	True	Rich Enos	11/01/11 14:36:53	NOT APPROVED	11/01/11 14:36:53
AF3870-M	GATE	True	TELEDYNE1	11/19/11 13:15:47	TELEDYNE	11/19/11 13:26:58
AF3870-X	GATE	True	TELEDYNE	11/19/11 15:44:45	NOT APPROVED	11/19/11 15:44:45
BWROG-01	GATE	True	David Thrall	04/27/05 14:30:29	NOT APPROVED	04/27/05 14:30:29

N-1: Stroke length not measured. This value is based off of orifice diameter input.

Rev 5A

Rich Enos

11/1/11 13:59

NOT APPROVED

11/1/11 13:59



**Export to Excel for Work in Progress Table**

File Tables

**Database Fields**

Input Data | Output Data | Test Data

- AC Voltage Drop Methodology
- Accident Operating Environment
- Actuator Close Control Scheme
- Actuator Installation Date
- Actuator Manufacturer
- Actuator Model/Type
- Actuator Order Number
- Actuator Overall Gear Ratio
- Actuator Serial Number
- Actuator Size
- Actuator Strokes per year
- Actuator Weight
- Actuator Worm Gear Set
- Alternate Valve Identification
- Assumed Hub TQ Coef, ft-lbs/in
- Bearing Coefficient of Friction
- BF DP at 10 Deg Open, psi
- BF DP at 15 Deg Open, psi

SQL Statement

Build SQL

0 Spreadsheet Columns

**Export to Excel for Work in Progress Table**

File Tables

**Database Fields**

Special | Outputs | Test Data | Controls

Valve | Actuator | Motor | System

- Valve Type
- Gate Valve Disc Type
- Globe Valve Sub-Type
- Globe Valve Flow Direction
- Valve Vendor
- Valve Size
- Valve Seat Diameter
- Valve Disc Bore Area (Rockwell)
- Valve Seat Contact Width (Rockwell)
- Gate Valve Wedge Half-Angle
- Calculation Method (close)
- Calculation Method (open)
- EPRI PPM Thrust (close)
- EPRI PPM Thrust (open)
- Valve Factor (close)
- Valve Factor (open)
- Non-Safety Related Valve Factor

Move Up

Add

Remove

Move Down

Reset

SQL Statement

Build SQL

Export to Excel



**Build SQL Statement for Work in Progress Table**

**Parameters**

Input Data | Output Data | Test Data | Controls

- AC Voltage Drop Methodology
- Accident Operating Environment
- Actuator Close Control Scheme
- Actuator Installation Date
- Actuator Manufacturer
- Actuator Model/Type
- Actuator Order Number
- Actuator Overall Gear Ratio
- Actuator Serial Number
- Actuator Size
- Actuator Strokes per year
- Actuator Weight
- Actuator Worm Gear Set
- Alternate Valve Identification
- Assumed Hub TQ Coef, ft-lbs/in
- Bearing Coefficient of Friction
- BF DP at 10 Deg Open, psi
- BF DP at 15 Deg Open, psi
- BF DP at 20 Deg Open, psi

Drag Parameters into an available Criteria or Double-Click on parameter for next available Criteria

OK | All Plants

**Build SQL Statement for Work in Progress Table**

**Criteria**

Parameters

Valve | Actuator | Motor | System

Special | Outputs | Test Data | Controls

- Calculation Name
- Calculation Revision
- Ready for Check
- Design Change Status
- Design Change Type
- Design Change Reason
- Test Data Update Computer Name
- Test Data Update Name
- Test Data Update Date
- Preparer Computer Name
- Preparer Name
- Preparer Last Edit Date

---

- JOG Evaluator
- JOG Evaluation Date

---

- Verifier Computer Name
- Verifier Name
- Verifier Last Edit Date

Drag Parameters into an available Criteria or Double-Click on parameter for next available Criteria

OK | All Plants | Cancel

**Criteria**

[Text Field] [Clear]

[Dropdown] [Text Field]

[Text Field] [Clear]

[Dropdown] [Text Field]

[Text Field] [Clear]

[Dropdown] [Text Field]

[Text Field] [Clear]

[Dropdown] [Text Field]

[Text Field] [Clear]

[Dropdown] [Text Field]

Match all Criteria (AND)  
 Match Any Criteria (OR)

[Clear All]



# Select Reference Interface

**Select Reference** [X]

Parameter	Dir	Value/Ref
Valve Gate Disc Type		Flexible Wedge
		537

Not Applicable  
 Note  
 Reference

2006.300-001-124 , Rev. C , Motor Operated Valve 14-GM72FB

Reference No.  All References

OK Cancel

**Select Reference** [X]

Parameter	Dir	Value/Ref
Valve Gate Disc Type		Flexible Wedge
		537

Not Applicable  
 Note  
 Reference

2006.300-001-124 , Rev. C , Motor Operated Valve 14-GM72FB

Reference No.  All References

OK Cancel



**FENOC MOV Test Analysis for All V&V Test Units ALL VALVES**

File Tables Tools Help

TEST-GT-02 GATE SB-3-150

**GL 96-05**

**Design Rev: 4 Verified by: Rich Enos on 6/18/09 15:54**

FUNCTION	OPEN	Last Edit	SIGNOFF	Last Signoff	PRINT
Sensitivity Calculations		11/24/09 09:27	<b>SIGNOFF NOT REQUIRED</b>		
Control Circuit Changes		11/24/09 09:27		N/A	
Limit Switch Settings		11/24/09 09:27		N/A	
Pre-Test Setup		11/30/09 12:36		N/A	
Post-Test Evaluation <b>REVIEW</b>		11/30/09 12:37		N/A	
Trending Evaluation		11/30/09 12:51		N/A	

**Add New Work Order**

Work Order	Status	Test Date	Time Frame	Test of Record
ALL-HIGH	Pre-Test	3/13/04	1R23	...
1234567C	Complete	6/6/03	1R24	...
ALL-LOW	Pre-Test	3/13/03	1R22	...
1234567D	Complete	6/6/02	1R24	...
1234567E	Complete	6/6/01	1R24	...



# Review Post-Test Evaluations

**Post-Test Evaluation for TEST-GT-02 WO# ALL-HIGH**

Work Done				Sensor Review				Data Review			
As-Found Data				As-Left Data				Evaluations			
Parameter	As-Found		As-Left		Parameter	As-Found		As-Left			
	Close	Open	Close	Open		Close	Open	Close	Open		
C14 UNDER THRUST	<input type="checkbox"/>		<input type="checkbox"/>		C14 OVER TORQUE	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
C16 OVER THRUST	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		C16 OVER TORQUE	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
O9 OVER THRUST		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	O9 OVER TORQUE		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
O9 OVER THRUST (EPRI/PL)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	C14 UNDER TORQUE (QT)	<input type="checkbox"/>		<input type="checkbox"/>			
C14 OVER THRUST	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		RUN TORQUE HIGH/LOW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
RUN THRUST HIGH/LOW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SPRING PACK GAP HIGH		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
STEM FACTOR HIGH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
STEM WEAR TIME HIGH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							

Evaluation Notes

N/A

OK      Rich Enos      11/30/09 12:37      NOT APPROVED      11/30/09 12:37           Cancel



MIDAS Maintenance for All Plants ALL VALVES

File Tables Tools Help

MO-3-23-014 GATE SMB-1-60

**Add New Workorder**

**Test Scheduled by Outage**

Workorder	Test Date	Time Frame
NEW W/O	01/19/2011	N/A
As-Left Test Date	<b>09/16/2001</b>	

Ok  Status Pending is LEGACY Cancel

**Select the work order as the basis for the new Test Instructions**

Test	Work Order	Status	Test Date	Test of Record
1	C0195426	Complete	09/16/01	YES
2	C0180487	Legacy	03/21/98	NO
3	OLD 97 Test	Complete	04/17/97	NO
4	OLD 92 Test	Legacy	08/17/92	NO

C0180487	N/A	Legacy	3/21/98	---
OLD 97 Test	N/A	Complete	4/17/97	---
OLD 92 Test	N/A	Legacy	8/17/92	---
Review V&V	2005	Pre-Test	12/3/91	---



MIDAS Maintenance for All Plants ALL VALVES

Pre-Test Setup for MO-3-23-014 WO# NEW W/O

Close Control Scheme: TORQUE      Safety Function: OPEN

Setup   Setup (cont'd)   As-Found   As-Left   **Previous Test**

Select      **Test Database Test 1\***

Test	Work Order	Status	Test Date	Test of Record
1*	C0195426	Complete	09/16/01	YES
2	C0180487	Legacy	03/21/98	NO
3	OLD 97 Test	Complete	04/17/97	NO
4	OLD 92 Test	Legacy	08/17/92	NO

Parameter	Value
Test Work Order	C0195426
Test Number	01259202
Test Date	9/16/2001
Close Torque Switch Setting	1.5
Open Torque Switch Setting	1.5
Close Average Running Thrust (lbs)	2496
Close Thrust at CST (lbs)	30386
Close Maximum Thrust (lbs)	42284
Open Thrust at Disc Pullout (lbs)	7404
Open Average Running Thrust (lbs)	2446

Exit      TELEDYNE      1/19/11 02:29:46      NOT APPROVED      1/19/11 02:29:46           Cancel

## OLD: Post-Test Evaluation / Inspection

**Post-Test Evaluation for TEST-GT-02 WO# 0912345**

As-Found Data      As-Left Data      Evaluations

Work Done      Sensor Review      Data Review      **Inspection**


Work Order: 0912345

PM Date: 06/04/2009

	Grease Type	Grease Rating					
		1	2	3	4	5	N/A
Main Gear Case	Nebula EP-0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motor Housing / Clutch Housing	Nebula EP-1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gearbox ( HBC / NDT )	N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Limiterque Switch Compartment	Mobil 28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Stem	Supperlube	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TEST DATA EVALUATION COMMENTS (DISPOSITION ALL FLAGGED EVALUATIONS)

Inspections performed between tests.

OK      Rich Enos      6/19/09 16:41            Cancel

NOT APPROVED      6/19/09 16:41



## NEW: Tables

FENOC MOV Test Analysis for All V&V Test Units ALL VALVES

File Tables Tools Help

- Design Data
- Pre-Test Setup
- Post-Test Evaluation
- Trending Evaluation
- Test Data Listing
- History
- Grease History**
- Failure History
- Limit Switch Settings

TEST ID: SB-3-150

96-05

Rich Enos on 6/18/09 15:54

FL	OPEN	Last Edit	SIGNOFF	Last Signoff	PRINT
Se		11/24/09 09:27	<b>SIGNOFF NOT REQUIRED</b>		
Co		11/24/09 09:27		N/A	
		11/24/09 09:27		N/A	

Grease History for TEST-GT-02

Item	Date	Workorder	Short Description
1	6/4/2009	0912345	Inspections performed bet
2	6/6/2006	1234567	Inspections performed bet
3	5/6/2000	9911709	Inspections performed bet
4	1/1/2000	N/A	N/A
5	1/1/2000	N/A	N/A
*	(Add)		

**Grease History for TEST-GT-02 Item 3** X

Print

Work Order:

PM Date:

Click for --> **Grease Ratings**

<u>Grease Type</u>	1	2	3	4	5	N/A
Main Gear Case <input type="text" value="Nebula EP-0"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motor Housing / Clutch Housing <input type="text" value="Nebula EP-1"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gearbox ( HBC / NDT ) <input type="text" value="N/A"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Limiterque Switch Compartment <input type="text" value="Mobil 28"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Stem <input type="text" value="Superlube"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TEST DATA EVALUATION COMMENTS (DISPOSITION ALL FLAGGED EVALUATIONS)

Inspections performed between tests.



FEHOC Nuclear MOV Program

Sheet 1 of 1

MOV Diagnostic Test Instructions / Criteria

Station / Unit Test Cases for Test Analysis Software UHIT 2

Valve Number TEST-GT-02

### As-Found Grease Condition Table

Work Order 9911709

PMDate 05/06/2000

Location	Grease Type	Grease Rating					
		1	2	3	4	5	N/A
Main Gear Case	Nebula EP-0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Motor Housing / Clutch Housing	Nebula EP-1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gearbox ( HBC / NDT )	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Limiterque Switch Compartment	Mobil 28	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stem	Superlube	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TEST DATA EVALUATION COMMENTS (DISPOSITION ALL FLAGGED EVALUATIONS)

Inspections performed between tests.



**FENOC MOV Test Analysis for All V&V Test Units ALL VALVES**

File Tables Tools Help

TEST-GT- [ ] SB-3-150

Design Rev [ ] **05** Enos on 6/18/09 15:54

Verify Software

FUNCTION	OPEN	Last Edit	SIGNOFF	Last Signoff	PRINT
Sensitivity Calculations	[Folder Icon]	11/14/11 14:50	<b>SIGNOFF NOT REQUIRED</b>		[Print Icon]
Control Circuit Changes	[Folder Icon]	11/14/11 15:02	[Lock Icon]	11/14/11 19:11	[Print Icon]
Limit Switch Settings	[Folder Icon]	11/14/11 15:14	[Lock Icon]	11/14/11 19:11	[Print Icon]
Pre-Test Setup	[Folder Icon]	11/14/11 16:08	[Lock Icon]	11/15/11 10:33	[Print Icon]
Post-Test Evaluation <b>REVIEW</b>	[Folder Icon]	11/16/11 10:13	[Hand Icon]	N/A	[Print Icon]
Trending Evaluation	[Folder Icon]	11/16/11 10:27	[Hand Icon]	N/A	[Print Icon]

**Add New Work Order**

Work Order	Status	Test Date	Time Frame	Test of Record
1012345	Post-Test	3/13/11	1146	...
0912345	Post-Test	6/4/09	0921	...
1234567	Complete	6/6/06	1R24	YES
1234567A	Complete	6/6/05	1R24	...
1234567B	Complete	6/6/04	1R24	...



**Trending View for TEST-GT-02**

### All Parameters

Trending IN
Trending OUT

Post Test IN
Post Test OUT

Pre-Test IN
Pre-Test OUT

Design Data
**Test Data**

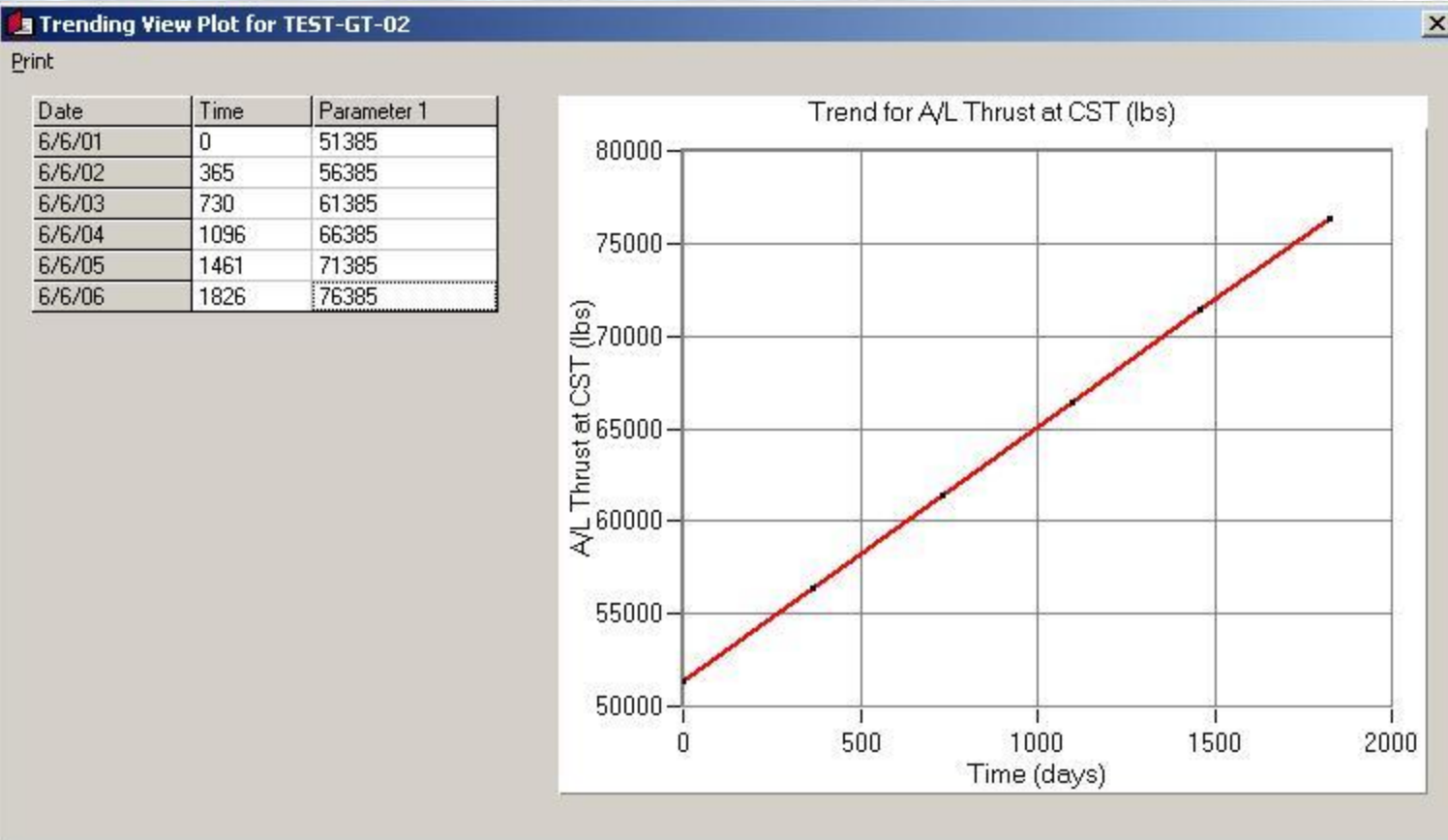
- A/L Time at CST (sec)
- A/L Time at Maximum Thrust (sec)
- A/L Time at Transition (sec) (O)
- A/L Time at Disc Pullout (sec)
- A/L Thrust at Transition (lbs) (C)
- A/L Average Running Thrust (lbs) (C)
- A/L Thrust at Hardseat Contact (lbs)
- A/L Thrust at CST (lbs)
- A/L Maximum Seating Thrust (lbs)**
- A/L Thrust at Transition (lbs) (O)
- A/L Thrust at Disc Pullout (lbs)
- A/L Average Running Thrust (lbs) (O)
- A/L Thrust Channel Offset (lbs)

### Selected Parameters

Drag parameters into an available field above or Double-Click on a parameter for next available field

Double-Click on the Parameter column below to graph

Work Order	Test Date	Time Frame	Parameter 1	Parameter 2	Parameter 3
1234567E	6/6/01	1R24	51385	30061	61422
1234567D	6/6/02	1R24	56385	29061	66422
1234567C	6/6/03	1R24	61385	28061	71422
1234567B	6/6/04	1R24	66385	27061	76422

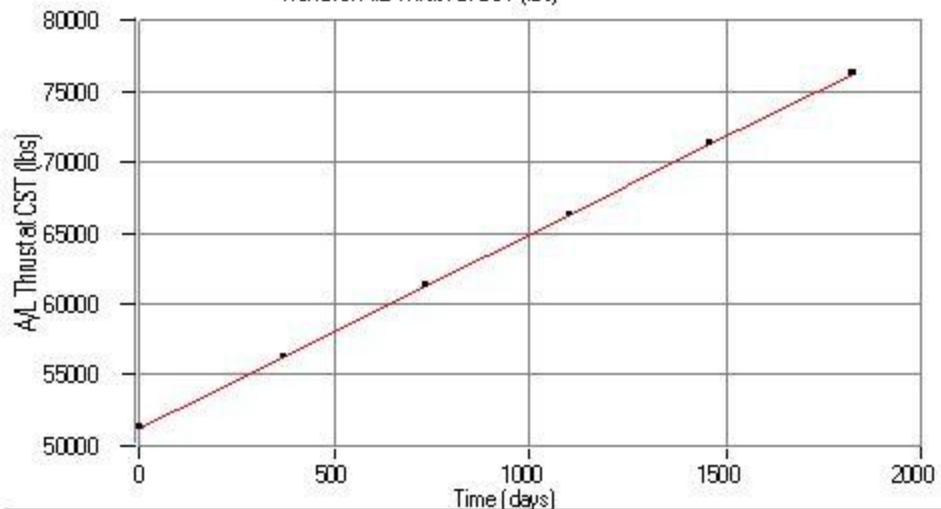




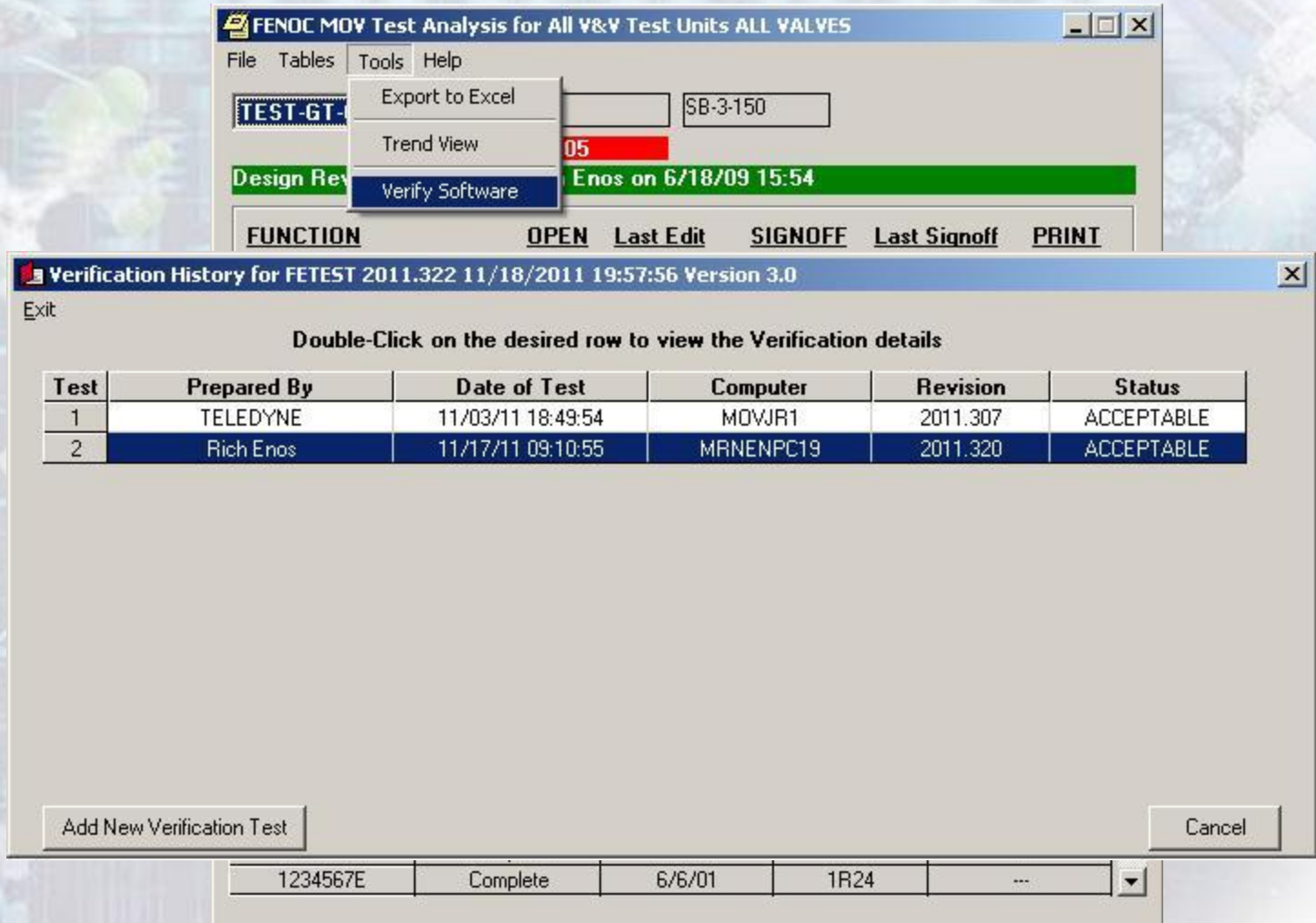
*FirstEnergy*

TRENDING VIEW REPORT  
AC MOTOR OPERATED GATE VALVE  
TEST-GT-02

Trend for A.L Thrust at CST (lbs)



Workorder	Test Date	Time (days)	Parameter
1234667E	6/6/01	0	51385
1234667D	6/6/02	365	56385
1234667C	6/6/03	730	61385
1234667B	6/6/04	1096	66385
1234667A	6/6/05	1461	71385
*1234667*	6/6/06	1826	76385



The screenshot shows the Verify Software interface. The main window is titled "FENOC MOV Test Analysis for All V&V Test Units ALL VALVES". A menu is open over the "Tools" tab, showing options: "Export to Excel", "Trend View", and "Verify Software". The "Verify Software" option is selected. Below the menu, there are input fields for "SB-3-150" and "05", and a green bar indicating "Enos on 6/18/09 15:54".

A "Verification History for FETEST 2011.322 11/18/2011 19:57:56 Version 3.0" dialog box is open in the foreground. It contains a table with the following data:

Test	Prepared By	Date of Test	Computer	Revision	Status
1	TELEDYNE	11/03/11 18:49:54	MOVJR1	2011.307	ACCEPTABLE
2	Rich Enos	11/17/11 09:10:55	MRNENPC19	2011.320	ACCEPTABLE

Buttons for "Add New Verification Test" and "Cancel" are visible at the bottom of the dialog box. Below the dialog box, a table shows a summary row:

1234567E	Complete	6/6/01	1R24	...
----------	----------	--------	------	-----





Verification History for FETEST 2011.322 11/18/2011 19:57:56 Version 3.0

Exit

Double-Click on the desired row to view the Verification details

Test	Prepared By	Date of Test	Computer	Revision	Status
1	TELEDYNE	11/03/11 18:49:54	MOVJR1	2011.307	ACCEPTABLE
2	Rich Enos	11/17/11 09:10:55	MRNENPC19	2011.320	ACCEPTABLE

**Add Verification History**

? This action will ADD Verification History  
Do you wish to continue?

Yes No

Add New Verification Test Cancel



**Verification History Details for New Test**

Print Sort Exit

**MidasTest 2011.18 installed on MOVJR1**  
**Test Prepared By: TELEDYNE on 01/05/11 02:44:12**  
**Most Recent Date of Last Edit is 01/19/11 02:29:46 for MO-3-23-014**  
**OVERALL STATUS IS ACCEPTABLE**

Valve	Workorder	Last Edit Information	Status	Notes
MO-3-12-068	C0140940 Legacy	TELEDYNE 06/19/08 22:02:14	PASS	N/A
MO-3-23-014	NEW W/O Pre-Test	TELEDYNE 01/19/11 02:29:46	PASS	N/A
MO-3-23-014	C0195426 Complete	Rich Enos 11/12/06 22:55:51	PASS	N/A
MO-3-23-014	C0180487 Legacy	TELEDYNE 06/19/08 22:02:14	PASS	N/A
MO-3-23-014	OLD 97 Test Complete	Rich Enos 01/05/07 13:03:09	PASS	N/A
MO-3-23-014	OLD 92 Test Legacy	Rich Enos 06/19/08 22:02:14	PASS	N/A
MO-3-23-014	Review V&V Pre-Test	Rich Enos 06/19/08 22:02:14	PASS	N/A
MPR-Gate-1	R0700222 Complete	Rich Enos 01/08/07 14:54:38	PASS	N/A
MPR-Gate-2	R0700222 Complete	Rich Enos 01/08/07 14:54:23	PASS	N/A
XCON-IN	C0195426 Review	Rich Enos 01/14/11 12:51:31	FAIL	EXPECTED



MIDAS TEST VERIFICATION HISTORY

Midas Test 2011.18 Installed on MOVJR1

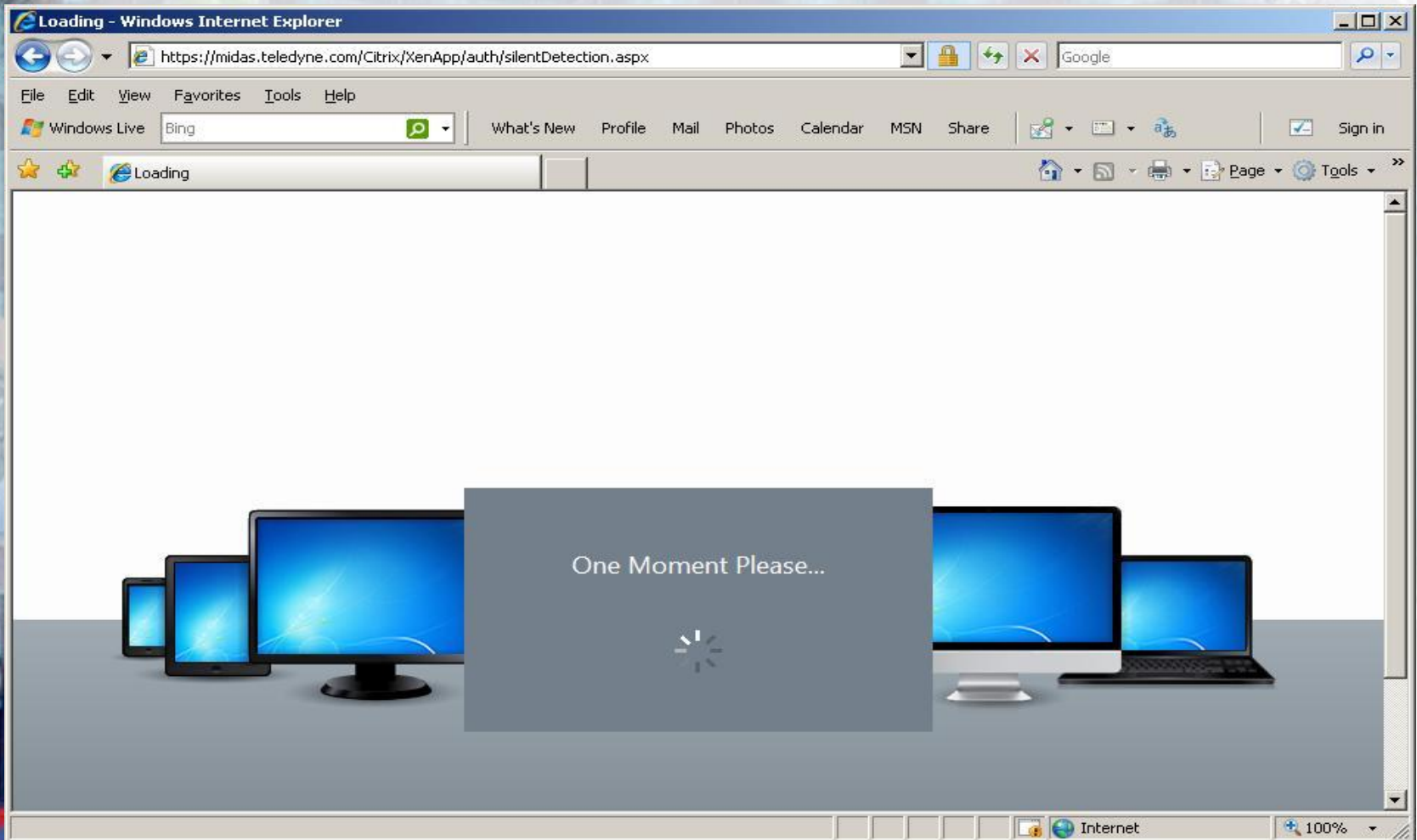
Test Prepared By: TELEDYNE on 01/05/11 02:44:12

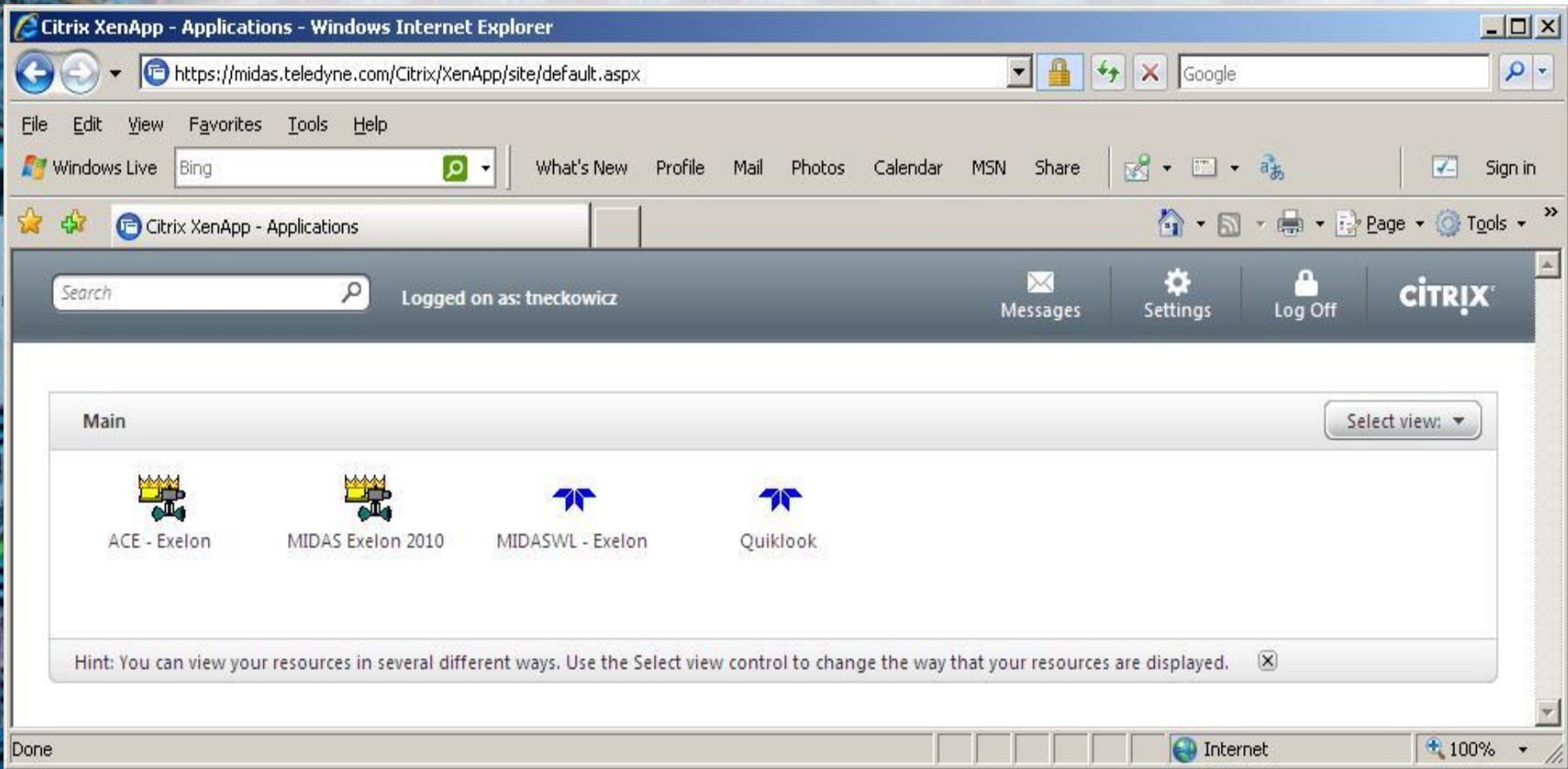
Most Recent Date of Last Edit is 01/19/11 02:29:46 for MO-3-23-014

OVERALL STATUS IS ACCEPTABLE

Value	Work order	Last Edit Information	Status	Notes
BWROG-01	Test Case P e-Test	TELEDYNE 12/21/10 14:06:40	PASS	N/A
EPRF-BF-07	P0541639 P e-Test	Rick Eikos 06/19/08 22:02:10	PASS	N/A
FunctionG8	C0002345 P e-Test	Rick Eikos 06/19/08 22:02:10	PASS	N/A
FunctionG8.1	Review V&V P e-Test	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FunctionG8.1	C0234567 P e-Test	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FunctionG8.2	C0456789 P e-Test	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FunctionGT	C0123456 Complete	Rick Eikos 10/29/06 13:21:16	PASS	N/A
FunctionGT	C0099876 Legacy	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FunctionGT-DD	C0987654 P e-Test	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FV-DO-101A	NEW W/O P e-Test	Rick Eikos 06/19/08 22:02:11	PASS	N/A
FV-DO-101A	P0532801 Legacy	TELEDYNE 06/19/08 22:02:12	PASS	N/A
FV-DO-101A	C0145761 Legacy	TELEDYNE 06/19/08 22:02:12	PASS	N/A
FV-DO-101B	Test Case 2 P e-Test	TELEDYNE 01/10/11 09:24:54	PASS	N/A
FV-DO-101B	Test Case P e-Test	TELEDYNE 01/06/11 14:27:09	PASS	N/A
FV-DO-101B	Test Case 1 P e-Test	TELEDYNE 01/06/11 14:45:38	PASS	N/A
FV-DO-101B	C0176799 Complete	TELEDYNE 12/21/06 11:15:41	PASS	N/A
HV-011-011A	C0876543 P e-Test	Rick Eikos 06/19/08 22:02:12	PASS	N/A
HV-012-031A	C0181853 Legacy	TELEDYNE 06/19/08 22:02:12	PASS	N/A
HV-012-032B	P0541639 P e-Test	Rick Eikos 06/19/08 22:02:12	PASS	N/A
HV-012-032B	Review V&V P e-Test	Rick Eikos 06/19/08 22:02:12	PASS	N/A
HV-049-1 F008	R0769302 Legacy	TELEDYNE 06/19/08 22:02:13	PASS	N/A
HV-049-1 F008	R0663834 Legacy	TELEDYNE 06/19/08 22:02:13	PASS	N/A
HV-049-1 F010	R0606425 Tiedling	TELEDYNE 12/11/06 11:19:52	PASS	N/A
HV-055-2 F105	R0801097 Review	Jim Minna 06/06/08 14:27:07	PASS	N/A
HV-055-2 F105	R0720054 Legacy	TELEDYNE 06/19/08 22:02:13	PASS	N/A
JOG-PV-01	R0700222 Complete	Rick Eikos 01/08/07 14:50:38	PASS	N/A

<https://midas.teledyne.com>





The screenshot shows a Windows Internet Explorer browser window displaying the Citrix XenApp web interface. The address bar shows the URL `https://midas.teledyne.com/Citrix/XenApp/site/default.aspx`. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The toolbar contains Windows Live, Bing, What's New, Profile, Mail, Photos, Calendar, MSN, Share, and Sign in. The main content area features a search bar, a user login status of "Logged on as: tneckowicz", and navigation links for Messages, Settings, and Log Off. The Citrix logo is visible in the top right corner. Below the navigation bar, there is a "Main" section with a "Select view:" dropdown menu. Four application icons are displayed: ACE - Exelon, MIDAS Exelon 2010, MIDASWL - Exelon, and Quiklook. A hint message at the bottom of the main content area reads: "Hint: You can view your resources in several different ways. Use the Select view control to change the way that your resources are displayed." The browser's status bar at the bottom shows "Done" and "Internet" with a 100% zoom level.

## MOV

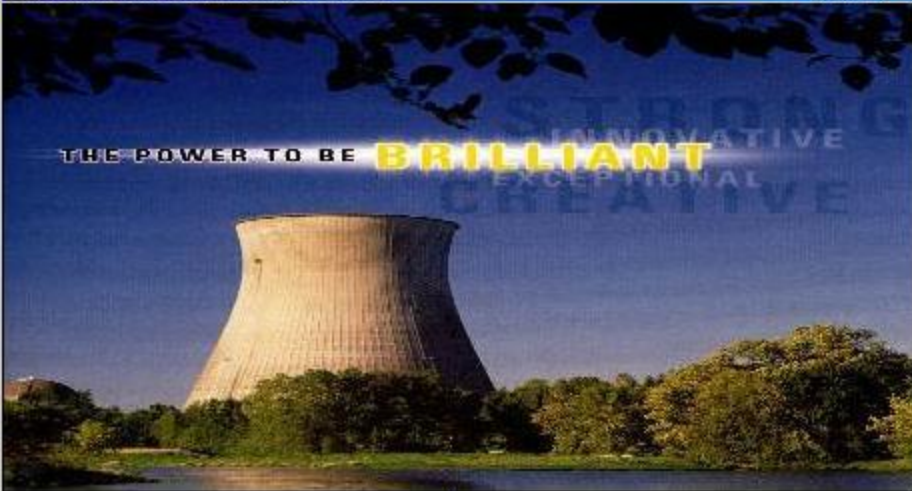
Exelon MOV Program (2012.174)





<b>MIDAS</b> 		<b>MIDATEST</b> 
 Limerick	<i>new</i>	 Limerick
 Peach Bottom	<i>new</i>	 Peach Bottom
 Braidwood	<i>new</i>	 Braidwood
 Byron	<i>new</i>	 Byron
 Dresden	<i>new</i>	 Dresden
 LaSalle	<i>new</i>	 LaSalle
 Quad Cities	<i>new</i>	 Quad Cities
 Clinton	<i>new</i>	 Clinton
 Three Mile Island	<i>new</i>	 Three Mile Island
 Oyster Creek	<i>new</i>	 Oyster Creek
 Verification 2010	<i>new</i>	 Verification 2010

## AOV

Exelon AOV Program (2012.53)



THE POWER TO BE **BRILLIANT**

<b>ACE 4.0</b> 	<b>ACE DP</b> 
<input type="radio"/> Limerick	<input type="radio"/> Limerick
<input type="radio"/> Peach Bottom	<input type="radio"/> Peach Bottom
<input type="radio"/> Braidwood	<input type="radio"/> Braidwood
<input type="radio"/> Byron	<input type="radio"/> Byron
<input type="radio"/> Dresden	<input type="radio"/> Dresden
<input type="radio"/> LaSalle	<input type="radio"/> LaSalle
<input type="radio"/> Quad Cities	<input type="radio"/> Quad Cities
<input type="radio"/> Clinton	<input type="radio"/> Clinton
<input type="radio"/> Three Mile Island	<input type="radio"/> Three Mile Island
<input type="radio"/> Oyster Creek	<input type="radio"/> Oyster Creek
<input type="radio"/> Verification 2011	<input type="radio"/> Verification 2011



## Margin Summary Form

As-Left Test Data Margins for MPR-Gate-2 (Work in Progress)
X

Show Print Exit

**Current PVT**

Schedule: N/A

Risk: M

Interval: 10.00 (years)

**Calculated PVT**

Max Interval: 10 (years)

Margin: 821.6 %

<

**Safety Function: OPEN**

Eq.	Parameter	Close	Open
D1	*Limit Control Margin	639.4	--
D2	*Limit Control Margin	--	821.6
D3	Capability Margin	622.5	--
D4	Capability Margin	--	883.3
D5	Pullout Margin	--	856.4
S1	*Min CST Thrust Margin	N/A	--
S2	Thrust Margin @C16	N/A	--
S3	Max CST Torque Margin	N/A	--
S4	Torque Margin @C16	N/A	--
S5	Torque Margin @O9	--	N/A
S6	*Thrust Margin @O9	--	N/A
S7	Running Load Margin	N/A	--
S8	Running Load Margin	--	N/A
S9	Min CST Torque Margin	N/A	--
S10	Max CST Thrust Margin	N/A	--
S11	EPRI Thrust Margin	--	-100

**Close Control: Torque**

What-If Calculator	Test Data	Units
Torque @TST	0	(ft-lbs)
Total Torque	0	(ft-lbs)
Pullout Torque	0	(ft-lbs)
Run Torque (C)	0	(ft-lbs)
Run Torque (O)	0	(ft-lbs)
Thrust @TST	0	(lbs)
Total Thrust	0	(lbs)
Pullout Thrust	0	(lbs)
Run Thrust (C)	0	(lbs)
Run Thrust (O)	0	(lbs)
TSS (Close)	0	
TSS (Open)	0	

**COF Analysis**

As-Left Test COF (Close)	N/A
As-Left Test COF (Open)	N/A
MAX Design COF (Close)	1.349
MAX Design COF (Open)	2.202
UnderThrust COF Limit	N/A

**Valve Factor Capability**

(Close)	N/A
(Open)	5.902

NOTE: Margin Notes can be entered in the History Table on the Margin Notes Tab.  
These Margin Notes will appear on the Margin report using the Print menu above.

Test of Record
N/A
01/01/00
N/A





**As-Left Test Margin Analysis for MPR-Gate-2 (Work in Progress)**

Show Exit

**Current PVT**

Schedule: **Outage** | Risk: **M** | Interval: **10.0** (years)

**Calculated PVT**

Max Interval: **10** (years) | JOG Margin: **75 %**

PM Frequency: **0.0** (years)

Stem Lube Frequency: **0.0** (years)

MCC Test Frequency: **0.0** (years)

**Safety Function: OPEN**

Eq.	Parameter	Close	Open
D3	D3: Capability Margin @COF = 0.2 (close)	572.8	--
D4	D4: Capability Margin @COF = 0.2 (open)	--	666.7
D5	D5: Structural Thrust Margin (close)	544.4	--
D6	D6: Structural Torque Margin (close)	739.6	--
D7	D7: Maximum COF to Close (close)	1.75	--
D8	D8: Maximum COF to Open (open)	--	1.79
D9	D9: Pullout Margin (open)	--	639.8
D10	D10: EPRI Gate Valve Max Seating Load (close)	166611	--
D11	D11: Acceptable Design Thrust Window (close)	OK	--
D12	D12: Acceptable Design Capability (open)	--	OK
D13	D13: Acceptable Design Torque Window (close)	OK	--
D14	D14: EPRI Gate Valve Seating Margin (close)	747.2	--
S1	S1: Thrust @TST Setup Margin (close)	330.2	--
S2	S2: Max Thrust Setup Margin (close)	33.2	--
S3	S3: Torque @TST Setup Margin (close)	1.9	--
S4	S4: Max Torque Setup Margin (close)	12.7	--
S5	S5: MLAT Pullout Torque Margin (open)	--	37.6
S6	S6: Pullout Thrust Margin (open)	--	75
S7	S7: Running Load Margin (close)	-148.02	--
S8	S8: Running Load Margin (open)	--	-154.3
S9	S9: Torque Setup Margin (close)	632.7	--
S10	S10: MLAT Max Thrust Setup Margin (close)	43	--
S21	S21: EPRI Open Unseating Margin	--	49.2

**Close Control: TORQUE**

What-If Calculator for Test Data

Torque @TST	<b>2887</b>	(ft-lbs)
Total Torque	<b>3298</b>	(ft-lbs)
Pullout Torque	<b>1535</b>	(ft-lbs)
Run Torque (C)	<b>287</b>	(ft-lbs)
Run Torque (O)	<b>209</b>	(ft-lbs)
Thrust @TST	<b>77378</b>	(lbs)
Total Thrust	<b>84599</b>	(lbs)
Pullout Thrust	<b>28142</b>	(lbs)
Run Thrust (C)	<b>11657</b>	(lbs)
Run Thrust (O)	<b>11950</b>	(lbs)
Run Load Basis	<b>Thrust</b>	
TSS (C)	<b>2.5</b>	
TSS (O)	<b>2.5</b>	

Parameters	Close	Open
Valve Factor Capability	<b>N/A</b>	<b>4.868</b>
Current As-Left COF	<b>0.394</b>	<b>0.603</b>
MAX Design COF	<b>1.747</b>	<b>1.787</b>
OverThrust COF	<b>0.229</b>	(Threshold)
A/L UnderThrust COF	<b>1.719</b>	(Threshold)
A/F UnderThrust COF	<b>1.719</b>	(Threshold)
MLAT OverTorque COF	<b>0.403</b>	(Threshold)
Structural OverTorque COF	<b>0.484</b>	(Threshold)
Allowable COF Increase	<b>0.009</b>	
Allowable COF Decrease	<b>0.165</b>	

Test of Record
R0700222
04/17/97
970tfyr0

## Questions?

