

Customer: A1 Chemicals, Inc.
Location: Austin, TX, United States

System: Chemical Production Plant
 (ID : 0001-0002-9868)

Date of Report: April 30, 2015
Reporting Period: October 1, 2014 to April 1, 2015


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The Guardian Dashboard is the primary interface for system health management tasks, as well as communicating factory recommendations to proactively mitigate areas of identified risk.

The Guardian Dashboard also provides a consolidated "System Health Score" which indicates the health of the system based upon a comparison of specified criteria relative to other systems subscribed to Guardian Support on a global basis. To review your system-specific health score, please visit your Guardian Dashboard website at <https://guardian.emersonprocess.com>.

To learn more about how the System Health Score is calculated, please download the Whitepaper-**Guardian System Health Benchmark** in the *Resources* page. This Whitepaper provides suggestions on how to best use the health score presented in the Guardian Dashboard, its associated risk prioritization and mitigating action management capabilities.

Please contact your local Emerson Process Management service provider for further information regarding this customized system health management application.



Resources

GUARDIAN COLLATERAL

- » [Guardian Support User Guide](#)
- » [Guardian Support for DeltaV Quick Guide](#)
- » [Guardian Support Quick Guide \(Other Product Lines\)](#)
- » [WP Guardian System Health Benchmark](#)
- » [Instruction on How to Download an ISO Image File](#)
- » [Software Download FAQ](#)

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About This Report

This report examines the service history and status of the system as recorded in Emerson's service management database. The report is a deliverable of Emerson's Guardian Support Service and was prepared by the Emerson Global Service Center with subsequent review and updates from your local Emerson Service provider.

System Content Data Collection: The method for collecting system content information for this system is the DeltaV System Registration Utility. In this report, Knowledge Base Articles and product lifecycle status changes matched to system content are reviewed and discussed.

Service Event Data Collection: Service events captured and discussed in this report include:

- Technical support calls which were assigned CTS service call numbers
- Health monitor alerts received by the Emerson Global Service Center
- Material return transactions which were assigned Return Authorization numbers
- New product shipments of software media, licenses, or hardware

Current and previous system analysis reports are available on the Emerson Guardian Website. You are encouraged to view the report online where you may use the website's links to inspect the detailed system information upon which this report was based.

Section 1 – Knowledge Base Articles (KBAs)

TIP: To simplify and accelerate your risk mitigation processes, Guardian provides:

- An executive summary to clarify trigger conditions and identify related system node names.
- A user note feature where you can record your mitigation actions or determination of non-applicability.

Actionable KBAs describe issues identified by Emerson that have the potential to result in unexpected system behavior in a running system. At the time this report was prepared, there were 7 outstanding actionable KBAs for this system, based on an automated comparison of this system's installed hardware and software against key KBA criteria.

Some issues are configuration or situation dependent, requiring additional review by the customer to completely determine a KBA's relevance to the system. The Guardian website provides a disposition mechanism for the system's Guardian user to close KBAs as appropriate mitigating actions are completed or issue is determined to be not relevant. This report omits KBAs which were marked as complete or not applicable in previous reporting periods.

Emerson strongly recommends that all open actionable KBAs be reviewed with the local Emerson service office. We encourage reviewing not just the product safety notice and security KBAs but also the process KBAs as these are determined by Emerson as something that could cause potential disruptive events.

Incomplete KBAs (Total: 7 KBAs)

KBA Number	Title	Category	Disposition	User Notes
NK-1100-1102	PRODUCT QUALITY CONCERN: Process Systems and Solutions -- M and S Series Serial Cards -- Flash Upgrade or Power Cycling Serial Interface Cards May Result in Failure	PRODUCT SAFETY NOTICE	In-Progress	
NK-1000-0058	Wrong Popup Picture Is Opened or the Message "Another Schedule, Picture, Toolbar, or Dynamo Set with the Name 'Filename' is Already Open" Appears	PROCESS	For Review	[Doe, Mary : 03 Aug 2011] KBAs read and understood [Van Camp, Kim : 20 Sep 2011] All informational KBAs dismissed. [Doe, Kim : 04 Feb 2014] To be reactivated in March

KBA Number	Title	Category	Disposition	User Notes
AP-0900-0176	Incorrect DeltaV Operator System Configuration Utility Path Settings May Result to Users Writing to the Wrong Module	PROCESS	For Review	[Doe, Mary : 03 Aug 2011] KBAs read and understood [Van Camp, Kim : 20 Sep 2011] All informational KBAs dismissed. [Ilao, Buddy : 04 Oct 2012] Will be discussed in next team meeting on when to apply hotfixes [Doe, Kim : 04 Oct 2012] Will be discussed in next team meeting on when to apply hotfixes
NK-1300-0110	Function Blocks May Not Behave as Expected When their Assigned IO Transitions Out of Fault State	PROCESS	In-Progress	

Table 1 – Incomplete KBAs

Completed KBAs (Total: 3 KBAs)

KBA Number	Title	Category	Disposition	User Notes
NK-1400-0069	PRODUCT SAFETY CONCERN: Process Systems and Solutions – DeltaV and Provox S-Series Carriers - Replace Terminal and/or Bus Power Plugs in S-Series 8-Wide Carrier, S-Series Power/Controller Carrier, and S-Series Provox Migration Carrier	PRODUCT SAFETY NOTICE	Action Complete	
AP-0400-0045 (with hotfix)	Communication Issue Encountered in a DeviceNet Segment when Using a Series 2 DeviceNet Card	PROCESS	Not Applicable	

Table 2 – Completed KBAs

Section 2 – Technical Support Calls

Calls opened from previous reporting period: 0
 Calls opened in this reporting period: 1
 Calls closed in the reporting period: 1
 Open calls as of end of the reporting period: 0

Tip: Use the Guardian online call submission feature to ask questions concerning the smaller items that you might not want to take time calling us about. With over 6000 DeltaV systems in service, it's possible we have the answer or can offer a suggestion.

Impact Classifications: A - Plant down, B – Process is up; yield, rate or quality jeopardized, C – Process is up; minimal risk to yield, rate or quality, D – Off-line/Non-control/demo, E – Enhancement request

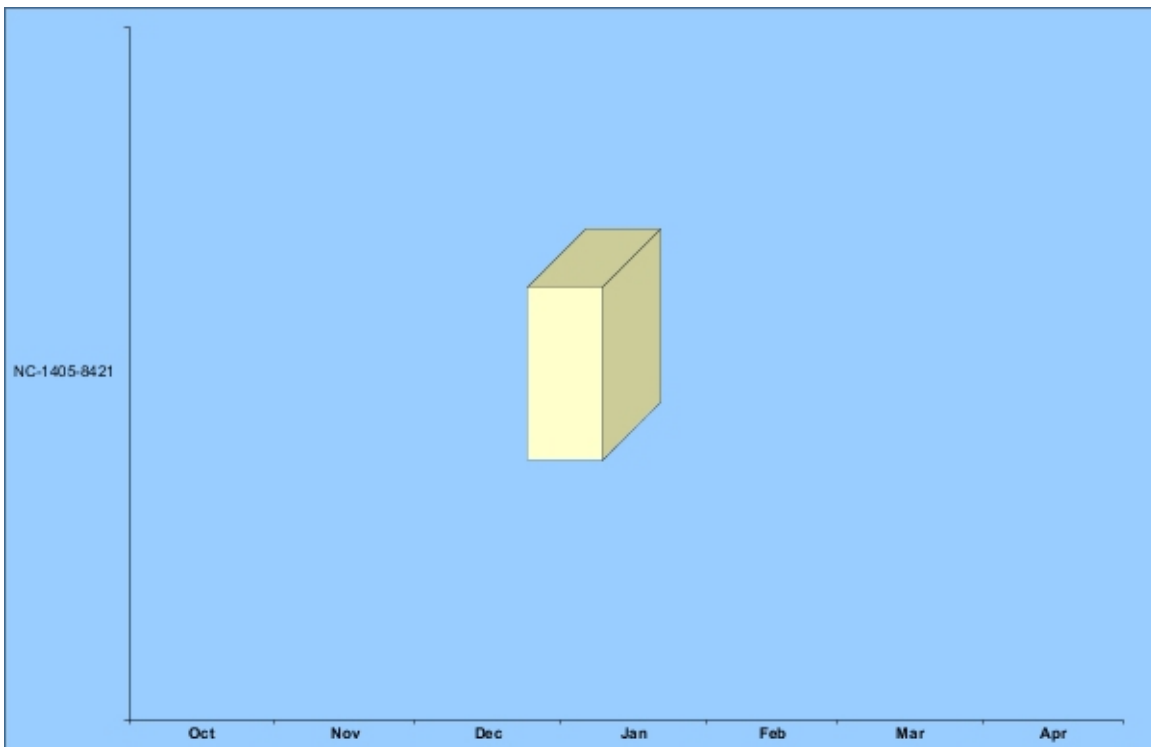


Figure 1 – Distribution of Calls (Number of Days Open)

Call Number	Category	Brief Description	Severity	Status	Days Open	Resolution
NC-1405-8421	Controller & I/O Hardware	Is the software filtering documented on KBA AUS1-115-010725115719 applicable for RTD CHARM?	C	Closed	16	RTD CHARMS uses the same equation stated in the KBA.

Table 2 – Call Statistics

Section 3 – Actionable Alerts

Call Number	Brief Description	Status	Days Open	Resolution
NC-1405-3588	Service: SHM_IONode_CPU_Usage in ALERT Status on node CIOC7582	Closed	61	Closing this call to monitor for recurrence.
NC-1405-2558	Service: SHM_IONode_CPU_Usage in ALERT Status on the following nodes: CIOC207R1, CIOC7381	Closed	49	Final Notification sent, Jan 2 2015
NC-1405-5314	Service: SHM_IONode_CPU_Usage in ALERT Status on node CIOC117R1	Closed	49	Closing this call to monitor for recurrence.
NC-1405-2570	Service: SHM_IONode_CPU_Usage in ALERT Status on node CIOC7361	Closed	48	Final Notification sent, jan 2 2015
AC-1401-3954	Service: SHM_IONode_CPU_Usage in ALERT Status on node CIOC1013F2	Closed	48	Closing this call to monitor for recurrence
NC-1405-3197	Service: SHM_IONode_CPU_Usage in ALERT Status on node CIOC7351	Closed	44	This alert is part of the filtered alerts list.
NC-1404-0049	Service: SHM_CPU_Usage in ALERT Status on node BRC_CTRL01	Closed	41	Last occurrence of the issue was on 2014-10-09 10:18:11. Closing this call to monitor for recurrence.

Table 3 – Actionable Alerts

Section 4 – Lifecycle Status

Emerson classifies product lifecycle stages into four stages:

- **Current** - The most current product offered, with published pricing, normal lead times, and complete support. These products are recommended for all new systems and major expansions.
- **Active** - Products that have been functionally replaced by the most current product, but remain available with published pricing, normal lead times, and complete support. These products are intended for expansion of existing systems where the need for product consistency outweighs the features, performance, and longer-term potential of the current product. The transition to Active Status marks the start of the product support commitment.
- **Supported Product** - These products are not available for purchase. Product support is available, but oriented to maintenance (i.e., replacement parts, repairs and field services) rather than system expansion. System Life Cycle Planning is encouraged to address long-term support and expansion.
- **Retired Product** - These products are not available for purchase. Product support is limited, potentially slower and more costly, and subject to material availability. The transition to Retired Status marks the completion of the product support commitment.

Emerson endeavors to forecast changes in lifecycle status well in advance of the actual status change, typically providing an 18 months advance forecast. Emerson recommends that particular attention be given to products in supported status and products which are not compatible with planned future DeltaV software versions.

For more information, please refer to the Emerson Product Support Guideline, available online either from the Guardian website or from the DeltaV product support website.

System Hardware Current Status Summary

Product Name	Status	DeltaV Software Version Compatibility	Installed Quantity
MD Controller	Supported	>=5.2	44
MD Plus Controller	Supported	>=7.3	14
SD Plus Controller	Supported	>=11.3	2
Analog In Card, Series 2 Redundant Capable, 4-20mA, HART	Current	>=4.1	262
H1 Fieldbus Card, Series 2 Redundant Capable	Current	>=6.1	226

Product Name	Status	DeltaV Software Version Compatibility	Installed Quantity
Discrete In Card, Series 2 Redundant Capable, 24 Vdc, Dry Contact	Current	>=4.1	147
Discrete Out Card, Series 2 Redundant Capable, 24 Vdc, High-Side	Current	>=4.1	137
Analog Out Card, Series 2 Redundant Capable, 4-20mA, HART	Current	>=4.1	88
Serial Interface with 2-Ports and Termination Block	Current	>=1.1	16
DeviceNet I/O Card, Series 2	Current	>=6.1	11
Serial I/O Card, Series 2 Redundant Capable	Current	>=4.1	9
Logic Solver Module for DeltaV SIS	Current	>=8.1	4
Wireless I/O Card (WIOC)	Current	>=11.3	2
PowerEdge R720 Rack-Mount Server; Embedded Windows Server 2008 Std Edition; Dual E5-2620 2GHz CPUs	Current	>=11.3	1

Table 4 – System Hardware Current Status

System Hardware Lifecycle Status Projections

Chart Notes: The presence of a bar segment indicates Emerson has scheduled future life-cycle transitions for this product, where the total length of the bar indicates the number of months from the report end date until the expected retired date and bar segment colors indicate intermediate life-cycle stages. Products not presented in this chart are in current status, with no expected change in lifecycle status within Emerson's product planning horizon.

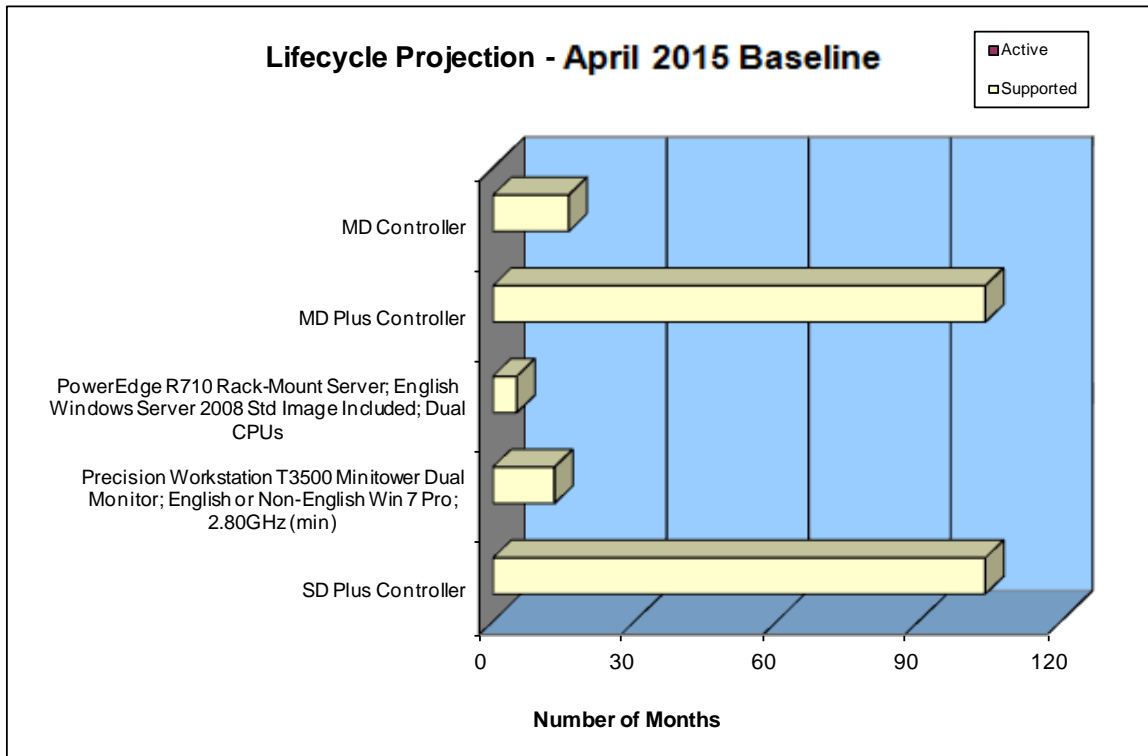


Figure 1 – System Hardware Lifecycle Status Projections

System Software Summary

Installed Version	Latest Distribution Build for the Installed Version	Installed Build	Status
V12	12.3.1	12.3.1	Version 12 is the current version of DeltaV software for English. Build 12.3.1 is the latest for Version 12.

Table 5 – System Software

Section 5 – System Profile Updates

Updates Received: 1
 Most Recent: **14 Feb 2015**
 Average Interval: **40**

Taking frequent snapshots of system content creates a valuable change history to use in problem resolution scenarios. It also ensures you receive the earliest possible notification for Knowledge Base Articles matching your actual system content.

Commentary: Emerson recommends submitting updates to system content at least once every 90 days, and anytime significant changes are made to system hardware or software content. Submitting an information update is simple. Use the SureService Registration Utility to capture system content, then upload it to the DeltaV Support website as illustrated below:

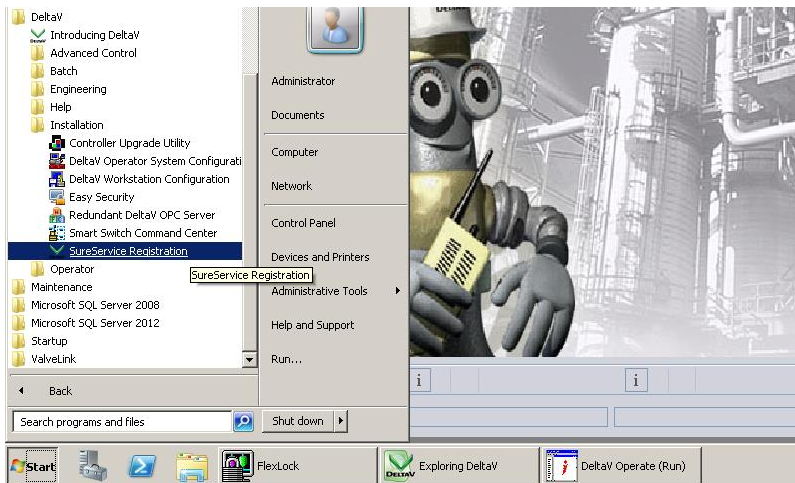


Figure 2 – Run the Registration Utility from the Professional Plus

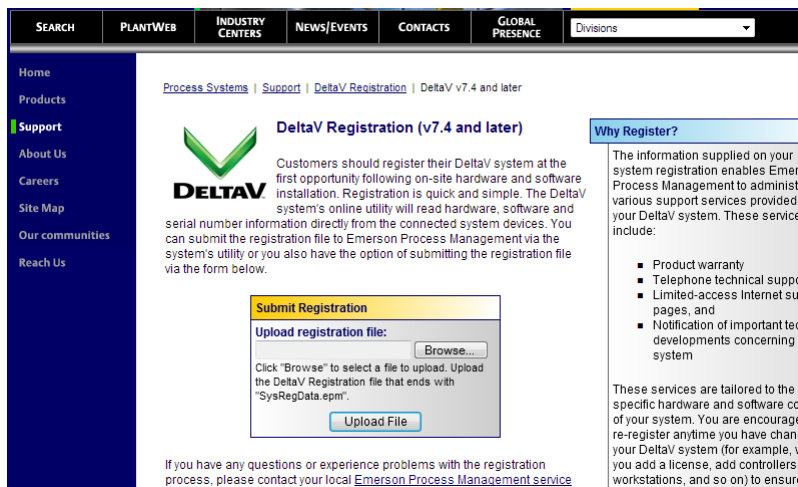


Figure 3 – Visit <http://www3.emersonprocess.com/Systems/support/registration/> to upload the file.

Guardian users can also choose to upload the registration file directly from their Guardian website:

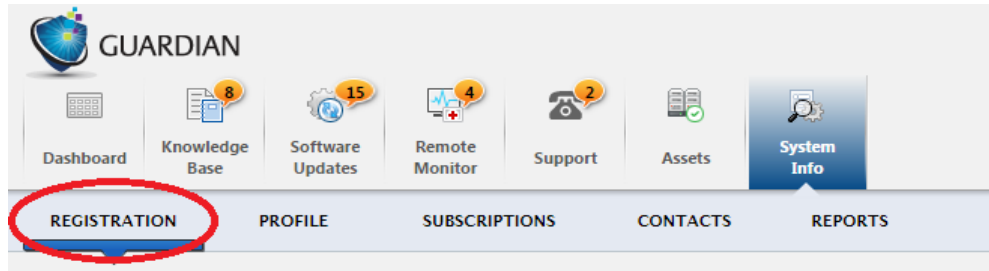


Figure 4 – Go to the Registration page under the System Info tab

<h3>Registration File Upload</h3> <p>Browse for your registration file that ends with "SysRegData.epm".</p> <input type="text"/> <input type="button" value="Browse..."/> <p>How to generate your registration file?</p> <input type="button" value="Start Upload"/>	<h3>WHY REGISTER?</h3> <p>The information supplied on your system registration enables Emerson Process Management to administer the various support services provided with your system. These services include:</p> <ul style="list-style-type: none">• Product warranty• Telephone technical support• Limited-access Internet support pages, and• Notification of important technical developments concerning your system
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Figure 5 – Registration File Upload page

Section 6 – Service Expirations

SureService Name	Expires	Remaining
DeltaV System Analysis Reports	01 Jan 2016	9 months
Guardian Support for DeltaV Systems	01 Jan 2016	9 months
System Reliability Services	01 Jan 2016	9 months
System Health Monitoring	01 Jan 2016	9 months
Guardian Windows Server Update Service	01 Jan 2016	9 months

Table 6 – Service Expiration Summary

Section 7 – System License Utilization

System-Wide License Utilization:

License Name	Units	Capacity	Configured	Difference	% Difference	
Database Size	DSTs	50	32	18	36.00%	
Detailed Usage of system DSTs:						
*** (Shortage of license in this tier is being covered by the tier above it)						
Tier 1	Analog Outputs	DST	25	2	23	92.00%
Tier 2 ***	Analog Inputs	DST	50	30	20	40.00%
Tier 3 ***	Discrete Outputs	DST	25	2	23	92.00%
Tier 4 ***	Discrete Inputs	DST	50	30	20	40.00%

Table 7 – License Utilization Table

Commentary:

- Licensee company and licensee location are the same as the End-user Company and End-User location.
- Licenses issued for the system are not exceeded by the user's system configuration as of 14 Feb 2015.

Section 8 – Hardware Material Returns

RA Date	RA #	Emerson Shipment of Replacement	Emerson Receipt of Customer Item	Return Type	Reason for Return	Problem Description	Call State	Qty	Description	Serial Number
25 Dec 2014	NM-1400-3938		14 Feb 2015	Failed Part	Failed at Installation	This Charm showed the bigger margine of error than the value that we can see on PDS(0.1%). We tried the test twice, 1st 0.1648%, 2nd 0.1663%.		1	Final Assy, AI 0-10 V IsolatedCHARM	P132773113

Table 7 – MRT Summary

Section 9 – Microsoft Updates

Emerson recommended that you review:

Approval Status	Description
Do Not Install	It has been determined that the update IS NOT COMPATIBLE with DeltaV systems. The update should not be installed.
Not Approved	It has been determined that the vulnerability does not exist on DeltaV systems. The update will not be tested for compatibility with the DeltaV software and it should not be installed on DeltaV systems.
Approved	It has been determined that the vulnerability will exist on DeltaV systems, and the update has been tested and approved for installation on DeltaV systems.
Approved As Needed	It has been determined that the vulnerability will only exist when optional Microsoft products or operating system components are in use.

Microsoft Operating System Updates

Node Name	Do Not Install	Not Approved	Approved	As Needed
02OP01	0	0	63	24
02OP02	0	0	63	24
02OP04	0	0	63	24
02OP05	0	0	63	24
02OP06	0	0	63	24
02OP07	0	0	63	24
16OPA01	0	0	63	24
16OPA02	0	0	63	24
16OPA04	0	0	63	24
22OP_V	0	0	63	24
22OP01	0	0	63	24
22OP02	0	0	63	24
22OP03	0	0	63	24
23OP_V	0	0	63	24
90OP01	0	0	63	24
90OP02	0	0	63	24
DELTAV_PROPLUS	0	0	59	54

Node Name	Do Not Install	Not Approved	Approved	As Needed
DVAMSSPZ3	0	0	57	44
DVAPCOPCZ3	0	0	57	44
DVBNRZ3	0	0	58	44
DVHISTZ3	0	0	57	44
DVIZSZ3	0	0	57	44
DVIZSZ3_S	0	0	57	44
DVOPCZ3	0	0	57	44
DVTERM1Z3	0	0	59	54

Table 8 – Microsoft Updates Summary

Section 10 – Local Site Activity

Date	Reference Number	Scheduled or Call Out	Service Summary
05-06 Nov 2014	1401138	Scheduled	add patch panel detail into system network architecture for TDI
11 Dec 2014	1400686	Scheduled	Done MOC from TDI; support MDI startup SFC, support MMDI, Support HNO3, Support OPC
05-14 Feb 2015	1350148	Scheduled	Finished MOC for TAP1UP020; other MOC from DNT/TDA; support MDI
01 Mar 2015	1409108	Scheduled	System health check in Diagnose and telnet; controller cabinet power supply check; windows update install; DeltaV hotfix install
28 – 29 Mar 2015	1401018	Scheduled	TDI new MOC; TDA redundancy pump project; DNT new MOC

Table 9 – Local Site Activity

{End of Report}

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